CENTROID
Polymer Technologies

CENTROID POLYMER TECHNOLOGIES

Your Reliable Specialist
in **Elastomers &**
engineering plastics.

Centroid
Polymer Technologies
MAKING CHEMISTRY TO WORK
www.centroidpolymer.com

4

CENTROID POLYMER TECHNOLOGIES, TRUSTED EXPERT IN ELASTOMER’S & ENGINEERING PLASTICS

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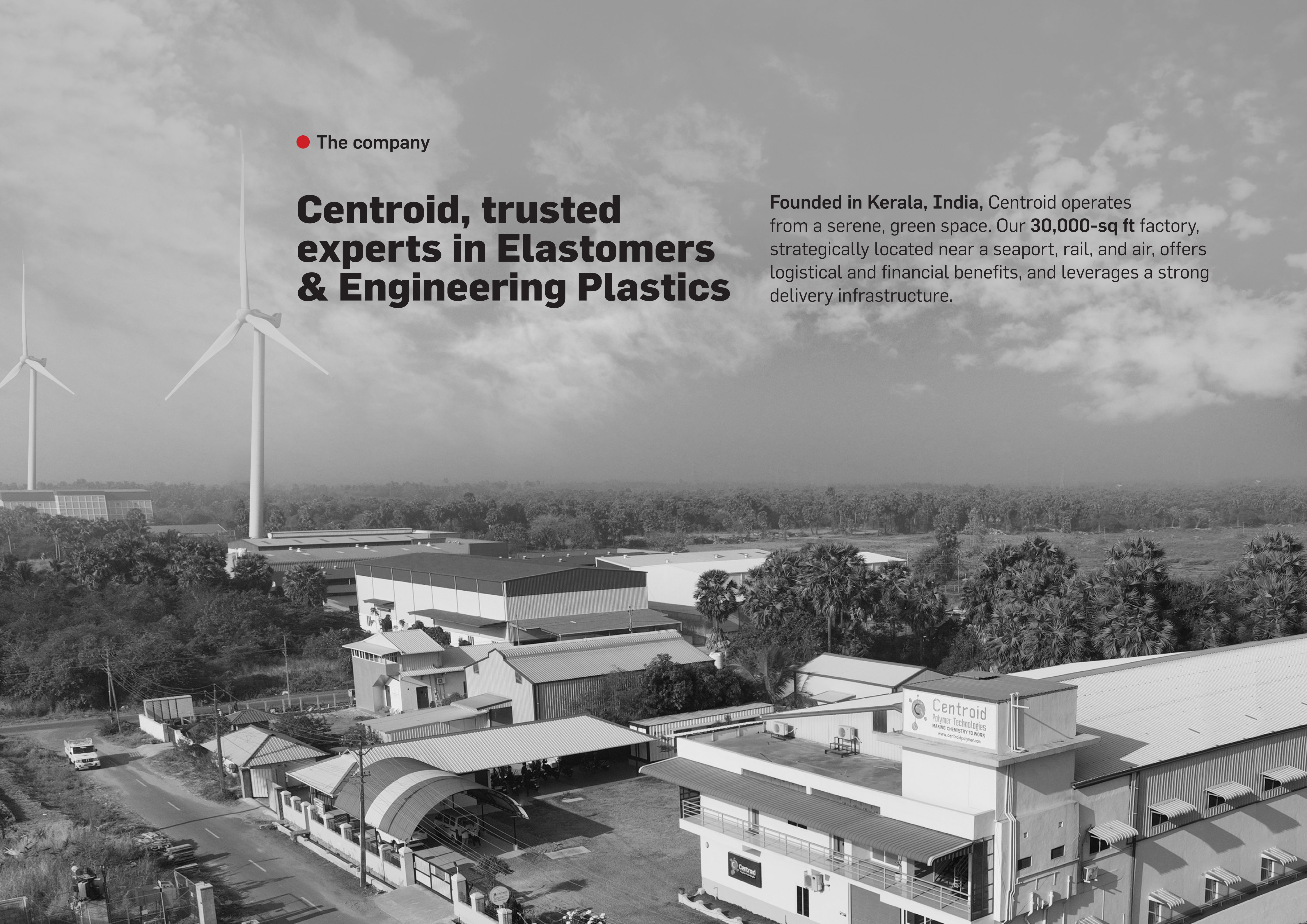
● The company

Centroid, trusted experts in Elastomers & Engineering Plastics

Founded in Kerala, India, Centroid operates from a serene, green space. Our **30,000-sq ft** factory, strategically located near a seaport, rail, and air, offers logistical and financial benefits, and leverages a strong delivery infrastructure.


Centroid
Polymer Technologies
MAKING CHEMISTRY TO WORK
www.centroidpolymer.com
Centroid

● Our chemistry

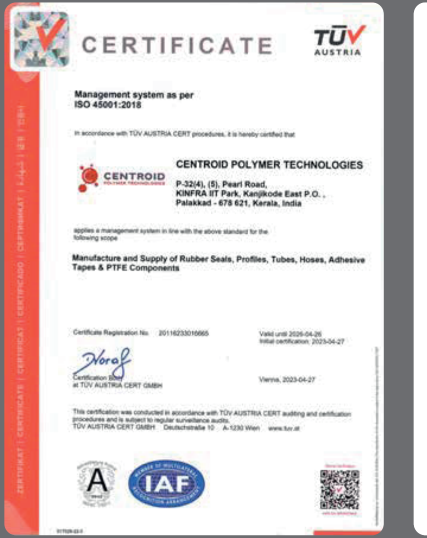
Engineering excellence for your toughest Challenges

Leading experts in high-quality elastomers & engineering plastics. We handle the entire process, ensuring the perfect solution for your most challenging applications

Formulation to fabrication: Precision in every step

Specializing in elastomers and Engineering Plastics. We offer comprehensive engineering solutions, from formulation to fabrication. Irrespective of the size or scale of your project.

CERTIFICATE OF APPROVALS



CERTIFICATE

TÜV AUSTRIA

Management system as per ISO 45001:2018

In accordance with TÜV AUSTRIA CERT procedures, it is hereby certified that

CENTROID POLYMER TECHNOLOGIES

P-32(4), (5), Pearl Road,
KINFRA IIT Park, Kanjikode East P.O. ,
Palakkad - 678 621, Kerala, India

applies a management system in line with the above standard for the following scope

Manufacture and Supply of Rubber Seals, Profiles, Tubes, Hoses, Adhesive Tapes & PTFE Components

Certificate Registration No. 20116233016665

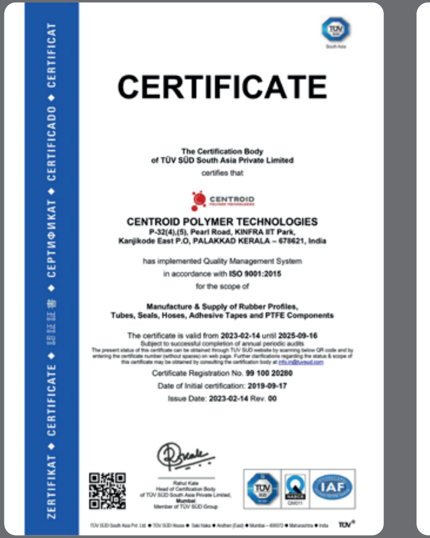
Valid until 2026-04-26
Initial certification: 2023-04-27

Certification Body
at TÜV AUSTRIA CERT GMBH

Vienna, 2023-04-27

This certification was conducted in accordance with TÜV AUSTRIA CERT auditing and certification procedures and is subject to regular surveillance audits.
TÜV AUSTRIA CERT GMBH Deutschstraße 10 A-1230 Wien www.tuv.at

Safety



ZERTIFIKAT ◆ CERTIFICATE ◆ 認証証書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

CERTIFICATE

The Certification Body
of TÜV SÜD South Asia Private Limited
certifies that

CENTROID POLYMER TECHNOLOGIES
P-32(4),(5), Pearl Road, KINFRA IIT Park,
Kanjikode East P.O, PALAKKAD KERALA – 678621, India

has implemented Quality Management System
in accordance with **ISO 9001:2015**
for the scope of

Manufacture & Supply of Rubber Profiles,
Tubes, Seals, Hoses, Adhesive Tapes and PTFE Components

The certificate is valid from **2023-02-14** until **2025-09-16**
Subject to successful completion of annual periodic audits
The present status of this certificate can be obtained through TÜV SÜD website by scanning below QR code and by entering the certificate number (without spaces) on web page. Further clarifications regarding the status & scope of this certificate may be obtained by consulting the certification body at info.in@tuvsud.com

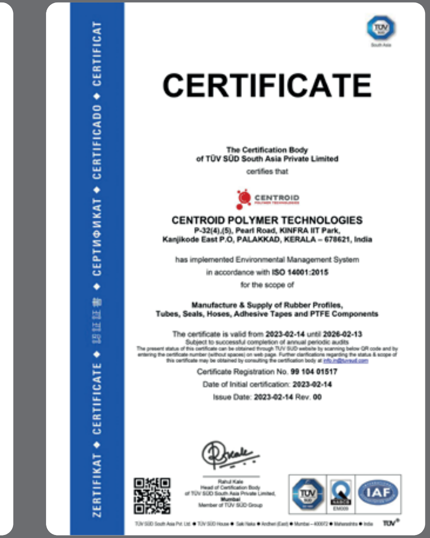
Certificate Registration No. **99 100 20280**
Date of Initial certification: **2019-09-17**
Issue Date: **2023-02-14** Rev. **00**

Rahul Kale
Head of Certification Body
of TÜV SÜD South Asia Private Limited,
Mumbai
Member of TÜV SÜD Group

QM011

TÜV SÜD South Asia Pvt. Ltd. ● TÜV SÜD House ● Saki Naka ● Andheri (East) ● Mumbai – 400072 ● Maharashtra ● India

Quality



ZERTIFIKAT ◆ CERTIFICATE ◆ 認証証書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

CERTIFICATE

The Certification Body
of TÜV SÜD South Asia Private Limited
certifies that

CENTROID POLYMER TECHNOLOGIES
P-32(4),(5), Pearl Road, KINFRA IIT Park,
Kanjikode East P.O, PALAKKAD, KERALA – 678621, India

has implemented Environmental Management System
in accordance with **ISO 14001:2015**
for the scope of

Manufacture & Supply of Rubber Profiles,
Tubes, Seals, Hoses, Adhesive Tapes and PTFE Components

The certificate is valid from **2023-02-14** until **2026-02-13**
Subject to successful completion of annual periodic audits
The present status of this certificate can be obtained through TÜV SÜD website by scanning below QR code and by entering the certificate number (without spaces) on web page. Further clarifications regarding the status & scope of this certificate may be obtained by consulting the certification body at info.in@tuvsud.com

Certificate Registration No. **99 104 01517**
Date of Initial certification: **2023-02-14**
Issue Date: **2023-02-14** Rev. **00**

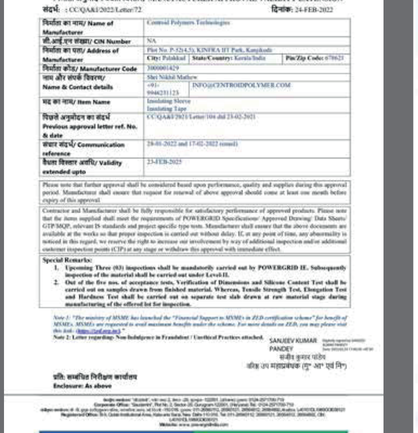
Rahul Kale
Head of Certification Body
of TÜV SÜD South Asia Private Limited,
Mumbai
Member of TÜV SÜD Group

EM009

TÜV SÜD South Asia Pvt. Ltd. ● TÜV SÜD House ● Saki Naka ● Andheri (East) ● Mumbai – 400072 ● Maharashtra ● India

Environment

Customer Approvals



पावरग्रिड
POWERGRID

पावर ग्रिड कॉर्पोरेशन ऑफ इंडिया लिमिटेड
(भारत सरकार का उद्यम)
POWER GRID CORPORATION OF INDIA LIMITED
(A Government of India Enterprise)

निर्माता अनुमोदन वैधता विस्तार/ MANUFACTURER APPROVAL VALIDITY EXTENSION

संदर्भ: : CC/QA&I/2022/Letter/72 दिनांक: 24-FEB-2022

निर्माता का नाम/ Name of Manufacturer	Centroid Polymers Technologies		
सी.आई.एन संख्या/ CIN Number	NA		
निर्माता का पता/ Address of Manufacturer	Plot No. P-52(4,5), KINFRA IIT Park, Kanjikode		
	City: Palakkad	**State/Country:** Kerala/India	**Pin/Zip Code:** 678621
निर्माता कोड/ Manufacturer Code	3000001429		
नाम और संपर्क विवरण/ Name & Contact details	Shri Nikhil Mathew		
	+91-9946231123	INFO@CENTROIDPOLYMER.COM	
मद का नाम/ Item Name	Insulating Sleeve Insulating Tape		
पिछले अनुमोदन का संदर्भ Previous approval letter ref. No. & date	CC/QA&I/2021/Letter/104 dtd 23-02-2021		
संचार संदर्भ/ Communication reference	29-01-2022 and 17-02-2022 (email)		
वैधता विस्तार अवधि/ Validity extended upto	23-FEB-2025		

Please note that further approval shall be considered based upon performance, quality and supplies during this approval period. Manufacturer shall ensure that request for renewal of above approval should come at least one month before expiry of this approval.

Contractor and Manufacturer shall be fully responsible for satisfactory performance of approved products. Please note that the items supplied shall meet the requirements of POWERGRID Specifications/ Approved Drawing/ Data Sheets/ GTP/MQP, relevant IS standards and project specific type tests. Manufacturer shall ensure that the above documents are available at the works so that proper inspection is carried out without delay. If, at any point of time, any abnormality is noticed in this regard, we reserve the right to increase our involvement by way of additional inspection and/or additional customer inspection points (CIP) at any stage or withdraw this approval with immediate effect.

Special Remarks:

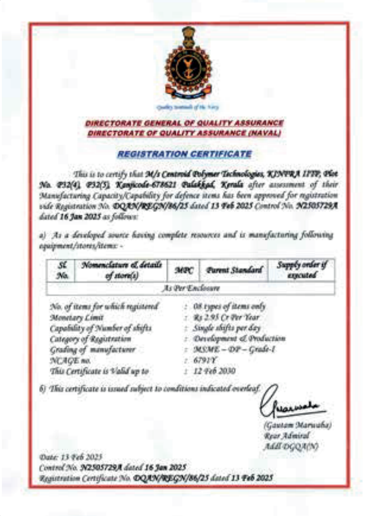
1. **Upcoming Three (03) inspections shall be mandatorily carried out by POWERGRID IE. Subsequently inspection of the material shall be carried out under Level-II.**
2. **Out of the five nos. of acceptance tests, Verification of Dimensions and Silicone Content Test shall be carried out on samples drawn from finished material. Whereas, Tensile Strength Test, Elongation Test and Hardness Test shall be carried out on separate test slab drawn at raw material stage during manufacturing of the offered lot for inspection.**

Note 1: "The ministry of MSME has launched the "Financial Support to MSMEs in ZED certification scheme" for benefit of MSMEs. MSMEs are requested to avail maximum benefits under the scheme. For more details on ZED, you may please visit this link: (https://zed.org.in)."

Note 2: Letter regarding Non-Indulgence in Fraudulent / Unethical Practices attached.

SANJEEV KUMAR PANDEY
संजीव कुमार पांडेय
वरिष्ठ उप महाप्रबंधक (गु॰ आ॰ एवं नि॰)

प्रति: सम्बंधित निरीक्षण कार्यालय
Enclosure: As above



DIRECTORATE GENERAL OF QUALITY ASSURANCE
DIRECTORATE OF QUALITY ASSURANCE (NAVAL)

REGISTRATION CERTIFICATE

*This is to certify that **M/s Centroid Polymer Technologies, KINFRA IITP, Plot No. P32(4), P32(5), Kanjicode-678621 Palakkad, Kerala** after assessment of their Manufacturing Capacity/Capability for defence items has been approved for registration vide Registration No. **DQAN/REGN/86/25** dated **13 Feb 2025** Control No. **N2505729A** dated **16 Jan 2025** as follows:*

a) As a developed source having complete resources and is manufacturing following equipment/stores/items: -

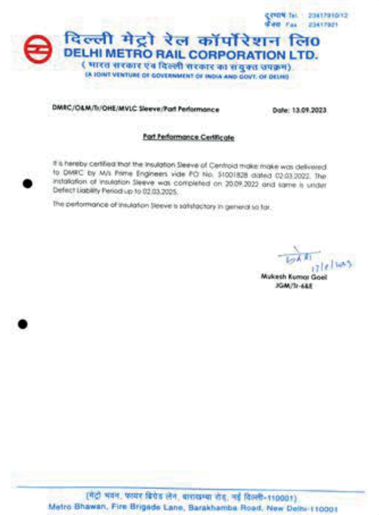
Sl. No.	Nomenclature & details of store(s)	MPC	Parent Standard	Supply order if executed
As Per Enclosure				

No. of items for which registered : 08 types of items only
Monetary Limit : Rs 2.95 Cr Per Year
Capability of Number of shifts : Single shifts per day
Category of Registration : Development & Production
Grading of manufacturer : MSME – DP – Grade-I
NCAGE no. : 6791Y
This Certificate is Valid up to : 12 Feb 2030

b) This certificate is issued subject to conditions indicated overleaf.

(Gautam Marwaha)
Rear Admiral
Addl DGQA(N)

Date: 13 Feb 2025
*Control No. **N2505729A** dated **16 Jan 2025***
*Registration Certificate No. **DQAN/REGN/86/25** dated **13 Feb 2025***



दूरभाष Tel. : 23417910/12
फैक्स Fax : 23417921

दिल्ली मेट्रो रेल कॉर्पोरेशन लिo
DELHI METRO RAIL CORPORATION LTD.
(भारत सरकार एवं दिल्ली सरकार का संयुक्त उपक्रम)
(A JOINT VENTURE OF GOVERNMENT OF INDIA AND GOVT. OF DELHI)

DMRC/O&M/Tr/OHE/MVLC Sleeve/Part Performance Date: 13.09.2023

Part Performance Certificate

It is hereby certified that the Insulation Sleeve of Centroid make make was delivered to DMRC by M/s Prime Engineers vide PO No. 51001828 dated 02.03.2022. The installation of Insulation Sleeve was completed on 20.09.2022 and same is under Defect Liability Period up to 02.03.2025.

The performance of Insulation Sleeve is satisfactory in general so far.

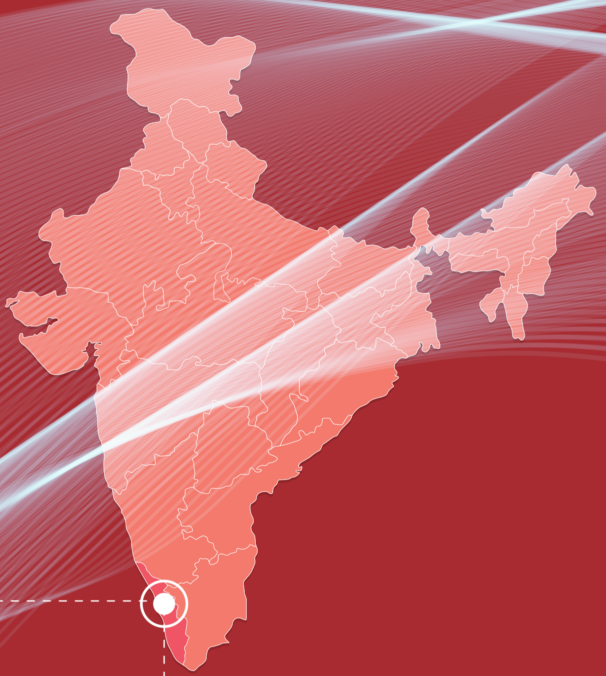
17/09/2023

Mukesh Kumar Goel
JGM/Tr-4&E

(मेट्रो भवन, फायर ब्रिगेड लेन, बाराखम्बा रोड, नई दिल्ली-110001)
Metro Bhawan, Fire Brigade Lane, Barakhamba Road, New Delhi-110001

OUR LOCATION

India



Kerala

CENTROID
POLYMER TECHNOLOGIES
Palakkad

Coimbatore International Airport - **45 km**

Kanjikode **5.9 km**

Cochin International Airport - **123 km**

Kochi Port **161 km**

POLYMER IS OUR BUSINESS

A EM Ethylene Acrylate	**CF** Carbon Fibre	⬡ Graphene	**CR** Neoprene	**E** CO Epichlorohydrine	**EVA** Ethylene-vinylacetate	**E** PDM Ethylene Propylene Diene	**E** U-AU Polyurethane
FEP Fluorinated Ethylene Propylene	**F** KM Flurocarbon	**HNBR** Hydrogenated Nitrile Rubber	**I** IR Butyl Rubber	**N** BR Nitrile Butadiene Rubber	**N** R Natural Rubber	**PEEK** Polyether Ether Ketone	**PTFE** Polytetrafluroe-thylene
PP Polypropylene	**PCTFE** Polychlorotrifluor-oethylene	**PVC** Polyvinyl Chlorine	**TPE** Thermoplastic Elastomer	**TPU** Thermoplastic polyurethane	**TPV** Thermoplastic Vulcanizates	**TFM** Modified PTFE	**P** H-VMQ Pharmaceutical Grade Silicone
V MQ Silicone	**F** VMQ Flurosilicone	**F** R-VMQ Fire Retardant Silicone	**H** T-VMQ High Temperature Silicone	FDA Food Grade Silicone	UL UL94 V0	EN45545-2 Silicone/EPDM	

INDUSTRIES WE SERVE

IDEAL FOR VARIOUS APPLICATIONS

- PUMPS & VALVES
- LIGHTING
- HYDRAULICS
- BUS & TRUCK
- SPECIALIST VEHICLE
- FOOD
- AUTOMOTIVE SPORT
- AGRICULTURE
- PNEUMATICS
- ELECTRICAL
- TRANSMISSION
- MEDICAL
- DEFENCE
- CONTRUCTION
- OFF ROAD VEHICLES
- RENEWABLE ENERGY
- MARINE
- RAIL
- PHARMACEUTICAL
- ELECTRONICS

MATERIAL SELECTION FOR POLYMERS

		Natural Rubber	Styrene Butadiene Rubber	Ethylene propylene diene rubber	Epichlohydin rubber	Nitrile Rubber	Hydrogeneted Nitrile rubber	Polyurethane rubber	Polyacrylate & Ethylene Acrylate rubber	Fluorocarbon rubber	Silicone rubber	Fluorosilicone	Thermoplastic Elastomers	Thermoplastic Polyurethene	Thermoplastic Vulcanizates	Polyvinyl Chloride
	Abbreviation	**NR**	**SBR**	**EPDM**	**CO/ECO**	**NBR**	**HNBR**	**EU AU**	**ACM/AEM**	**FKM**	**VMQ**	**FVMQ**	**TPE**	**TPU**	**TPV**	**PVC**
	Hardness Range Shore A		**35-96**	**20-96**	**40-90**	**30-95**	**45-98**	**55-90**	**50-90**	**40-90**	**30-85**	**30-80**	**30-95**	**45-98**	**55-90**	**30-90**
Thermal Properties	Low Temperature flexibility down to oC	**-55**	**-30**	**-50**	**-35**	**-30**	**-45**	**-30**	**-30**	**-20**	**-65**	**-45**	**-30**	**-45**	**-30**	**-55**
	Maximum Service Temperature oC	**80**	**100**	**130**	**130**	**110**	**150**	**120**	**150**	**200**	**200**	**200**	**110**	**150**	**120**	**80**
Resistance Properties	Fuel	○	○	○	◕	○	◑	◑	◔	●	◔	◕	◑	○	○	◑
	Mineral Oil (100 oC)	○	○	○	●	●	◕	◑	◕	●	◑	◕	◑	●	○	◑
	Acids (25% Sulphuric Acid at 0° C)	◔	◔	●	●	◑	●	◑	◑	●	◑	◑	◑	◑	●	●
	Water (at 100 oC)	◔	◔	●	◕	◑	●	○	◑	●	◕	◕	◑	◑	○	◑
	Weathering & Ozone	◑	◑	●	●	◔	●	◕	◕	●	●	●	◑	○	○	○
	Air impermeability	●	◑	◑	◕	◕	◕	◕	◑	●	○	◔	◔	◔	◑	○

WE ADHERE TO THE LATEST INDUSTRY STANDARDS

SAE INTERNATIONAL

ASTM INTERNATIONAL

FDA

ISO

DIN

afnor

UL

IEC

EN45545-2

RoHS

OUR RENOWNED CLIENTS

इसरो isro

हिएलि HAL

राष्ट्र की सेवा में परमाणु
भा प अ कें
BARC
ATOMS IN THE SERVICE OF THE NATION

eppi

पावरग्रिड POWERGRID

JSW

DELHI METRO

TATA

IndiGrid

KALPA-TARU®

TATA POWER

BBC CELLPACK

beml
NEW FRONTIERS. NEW DREAMS

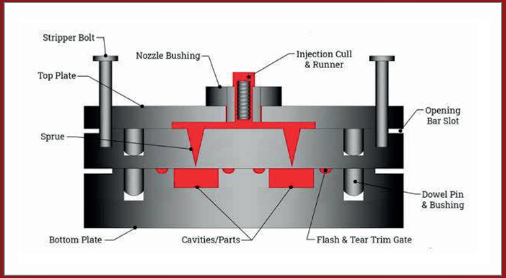
CAPABILITIES

YOUR PROJECT, OUR PASSION: RUBBER & PLASTIC SOLUTIONS, FROM IDEA TO REALITY

(Made in India)

1. Compounding

2. Design


Stripper Bolt
Nozzle Bushing
Injection Cull & Runner
Top Plate
Opening Bar Slot
Sprue
Dowel Pin & Bushing
Bottom Plate
Cavities/Parts
Flash & Tear Trim Gate

3. Moulding

4. Extrusion

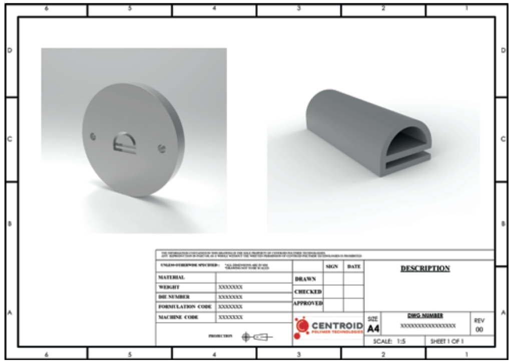
5. Rubber Fabrications

Designed, Engineered & Manufactured In India

COMPOUNDING

Our blend of knowledge, expertise, and technology ensures consistent, high-quality service. We produce a wide range of rubber compounds, tailored to client needs, including:

- **Silicone Compounds**
- **Toll Mixing**
- **Formulation**
- **Custom Mixes**


UNLESS OTHERWISE SPECIFIED :
MATERIAL
WEIGHT
XXXXXXX
DIE NUMBER
XXXXXXX
FORMULATION CODE
XXXXXXX
MACHINE CODE
XXXXXXX
PROJECTION
SIGN
DATE
DRAWN
CHECKED
APPROVED
CENTROID
POLYMER TECHNOLOGIES
DESCRIPTION
SIZE
A4
DWG NUMBER
XXXXXXXXXXXXXXXX
REV
00
SCALE: 1:5
SHEET 1 OF 1

DESIGN

- Product Design & Development
- Material Formulations (Custom Spec)
- Tool Design & Manufacturing
- Efficiency Optimization
- Finished Goods (Consumer & Industrial)

CENTROID POLYMER TECHNOLOGIES CAPABILITIES

EXTRUSION

THERMOPLASTIC	RUBBER
SOFT PVC	BUTYL
TPV	SILICONE
TPU	FLUROSILICONE
TPE	PLATINUM CURED SILICONE
PP	USP CLASS IV SILICONE
	INDIRECT FOOD CONTACT SILICONE
	FLAME RETARDANT UL94 VO.V1 SILICONE
	SILICONE SPONGE
	EN45545-2
	NBR
	NEOPRENE,
	EPDM
	FKM
	EPDM

MOULDING

RUBBER	FLURO POLYMER
NEOPRENE	PTFE
HNBR	TFM
NBR	PFA
EPDM	
FLURO CARBON	

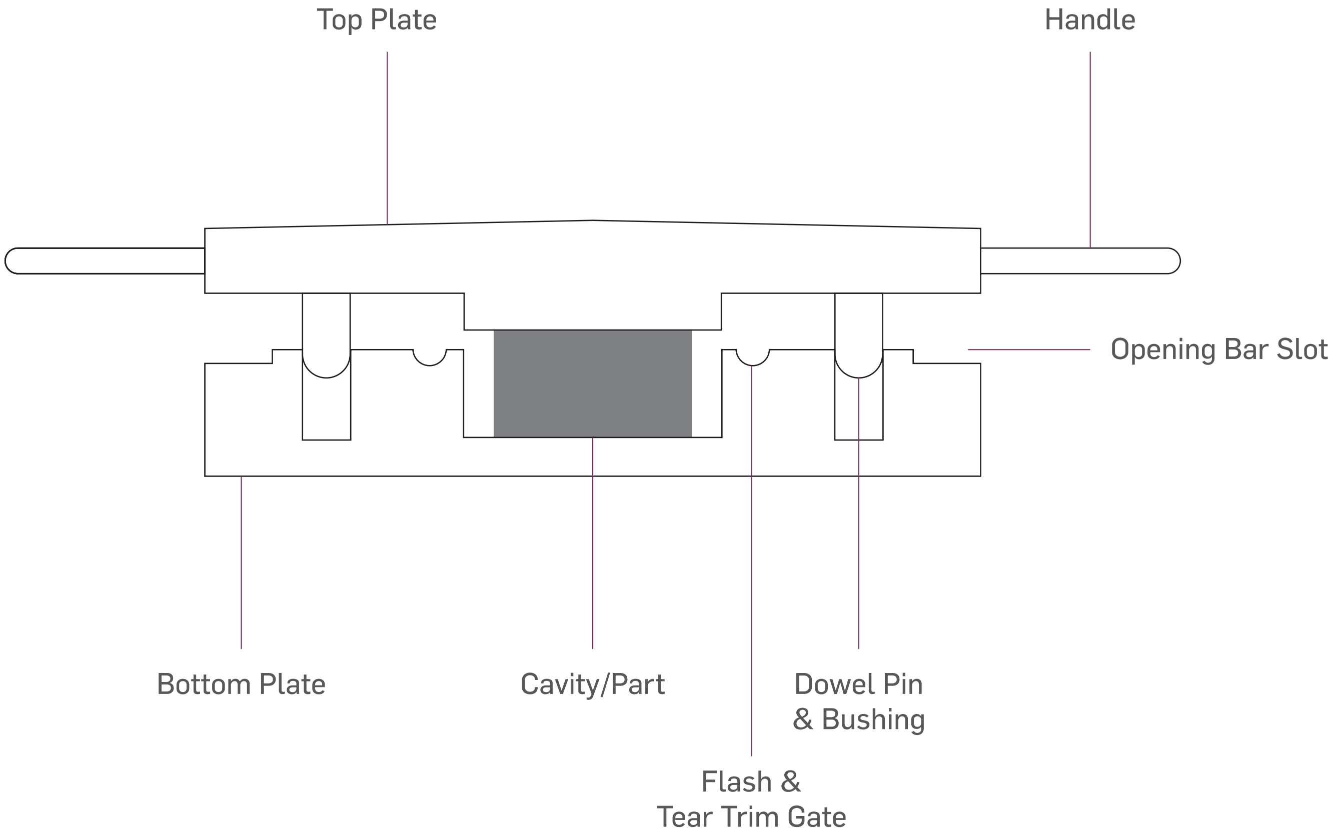
HAND FABRICATION

SILICONE	NR/SBR
NBR	EPDM

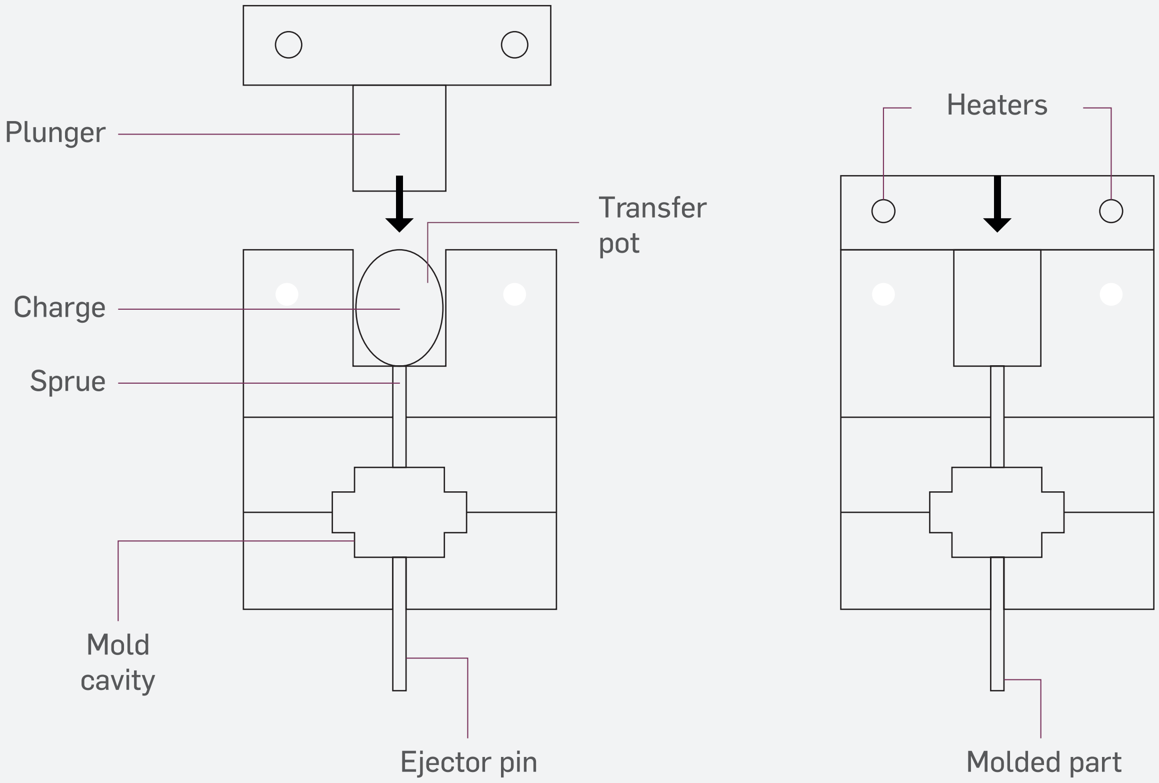
MOULDING

THE MOLDING OF RUBBER PARTS : 3 WAYS

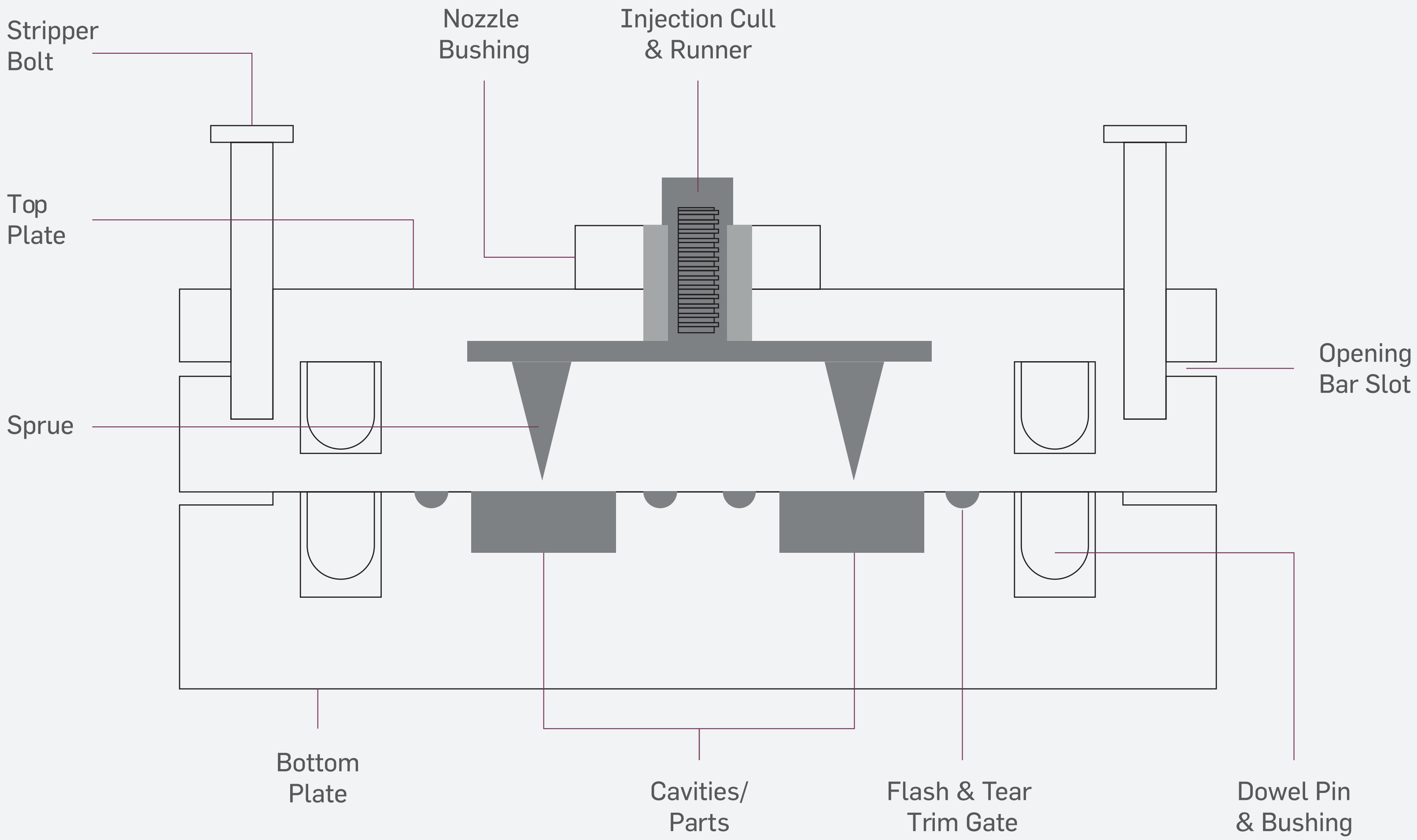
Compression Molding


Top Plate
Handle
Opening Bar Slot
Bottom Plate
Cavity/Part
Dowel Pin
& Bushing
Flash &
Tear Trim Gate

Transfer Molding


Plunger
Transfer pot
Charge
Sprue
Mold cavity
Ejector pin
Heaters
Molded part

Injection Molding


Stripper Bolt
Nozzle Bushing
Injection Cull & Runner
Top Plate
Opening Bar Slot
Sprue
Bottom Plate
Cavities/ Parts
Flash & Tear Trim Gate
Dowel Pin & Bushing

O-RINGS & GASKETS

O-RINGS

O-rings are crucial mechanical seals, typically made of flexible elastomers like rubber or silicone. Shaped like a torus (doughnut), they create a tight seal between two mating surfaces. This prevents the leakage of fluids or gases, even under extreme pressure exceeding 5,000 PSI.

Essentially, an O-ring is a specialized gasket placed in a groove. When the surfaces come together, the O-ring is compressed, forming a reliable and durable seal. They are widely used across various industries due to their simplicity, effectiveness, and ability to withstand harsh environments.

Applications

Hydraulic seals

Oil seals

Equipment with fluid seal points

Medical devices

Pharmaceutical & Medical industry

HVAC- Heating, Ventilation, Air conditioning

Pipe joints

Pulp & Paper industry

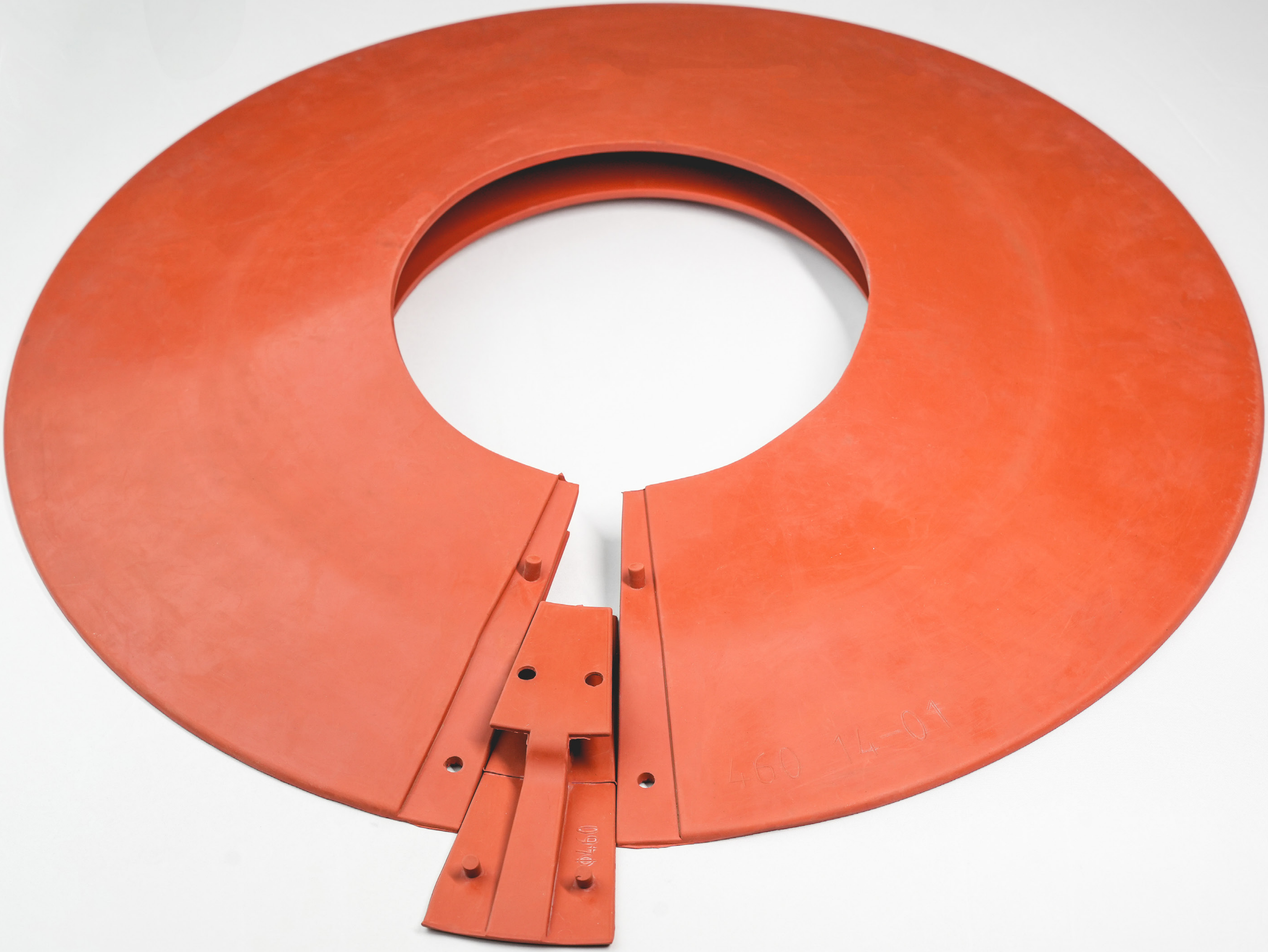
Fuel System

GASKETS

A gasket is a flat seal used to prevent fluid or gas leakage between mating surfaces. It's typically made of compressible material like rubber or metal. While all O-rings are technically gaskets, not all gaskets are O-rings. O-rings have a specific circular cross-section, unlike other gasket shapes.

Applications

- Electric motors, Power Generators Transformers
- Aerospace & Defence industry
- Electronics
- Transportation & Automotive
- Handheld Communication device
- Medical devices
- Telecommunications equipment
- Food & Beverage industry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RUBBER MOULDED PRODUCTS

RUBBER BELLOW, BOOTS & DUST COVER SEALS

Centroid Polymer Technologies specializes in high-quality, custom-engineered rubber bellows and boots. Our made-to-order solutions address demanding applications requiring secure, flexible joints and protection against harsh environments. We can manufacture bellows and boots in virtually any shape or size, including double-cuff expansion bellows, tapered bellows, molded rubber boots, and custom designs.

Rubber bellows provide a flexible seal against dust, moisture, oil, chemicals, UV, and other contaminants. They enable controlled movement while protecting critical components. Rubber boots are widely used in industrial and automotive applications, often referred to as “gaiters” in automotive contexts. These boots safeguard vehicle suspension systems from dirt and debris.

RUBBER BONDED PRODUCTS

We offer in-mold bonding of rubber to various substrates at our advanced facility. Bond rubber to metals (steel, brass), ceramics, PTFE, nylon, and many plastics. This creates a stronger bond than post-glueing. Our expert technicians can help you find the best solution for your application. Applications include anti-vibration mounts, dampers, suspension bushes, bonded diaphragms, and valve seats.

There are many applications in different industries for rubber-to-metal bonded products, such as

- **Construction :** Conveyor belts, vibration isolation, mounts & stabilizers.
- **Automotive :** Gaskets, seals, bushings, engine mounts, hangers, bumpers.
- **Diverse Applications :** Found in agriculture (seals, mounts, pumps), medical (O-rings, tubing, extrusions), and various other industries.

Materials for Rubber to Metal Bonding

Bond rubber/polymer to metals (steel, Al, brass, Cu). Select suitable material based on environment & desired use. These can include

- **Natural rubber (NR)**
- **Nitrile (NBR)**
- **Neoprene (CR)**
- **Ethylene-Propylene (EPDM)**
- **Silicone (VMQ)**
- **Fluro-Elastomer (FKM)**

Bonding Processes

Centroid Polymer Technologies excels in bonding rubber, carbon fiber, metal, and plastic. With expertise across aerospace, automotive, food & beverage, and manufacturing, we deliver high-strength, durable bonds using specialized gels. Contact us for expert bonding solutions.

Rubber to Metal Bonding Examples

Rubber to Aluminum (cobalt content can affect adhesion), Steel, Stainless Steel (some grades have poor adhesion), Titanium, Carbon Fiber (cold bond), Copper, Brass, Cast Iron, Phosphor Bronze, Silver, Tungsten, Zinc etc.

RUBBER GROMMETS

Rubber grommets protect wires/tubes from damage when passing through metal or other materials. They shield against sharp edges, preventing wear and tear. Used in electronics, they ensure accuracy, durability, and safety. Rubber grommets also act as effective seals and gaskets.

For example, we use commercial grades of

- **SBR**
- **Silicone**
- **Neoprene® 1**
- **EPDM**
- **Buna-N (Nitrile)**

Materials are available in commercial and specification grades and requirements, including NASM 3036 composition. A and B, Mil-Spec, ASTM, AMS, SAE, and others.

Advantages

- Oil resistance
- High & low temperature resistance
- Tear resistance
- Corrosive resistance (Phosphoric, Hydrochloric and Sulphuric acid)
- Weather resistance (against negative effects of UV & Ozone)

Applications

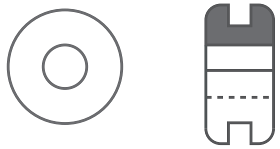
- Oil & Gas
- Pharmaceuticals
- Air Industry
- Diary
- Marine
- Electrical & Electronics
- Ventilation Industry
- Food

Shapes of Rubber Grommets?

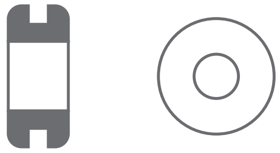
We produce grommets in many shapes at Minor Rubber. Some of them are **Oval, Square, Rectangular, Oblong and Round**.

Types of Rubber Grommets

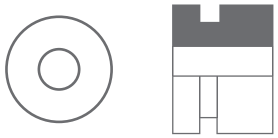
Insulation Grommets



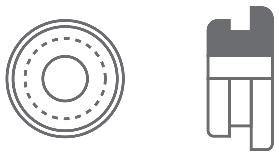
Mil-Spec Grommets



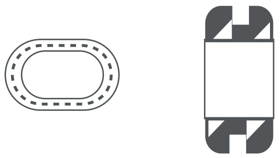
Vibration Mount Grommets



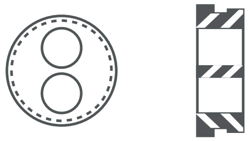
Mounting Hole Grommets



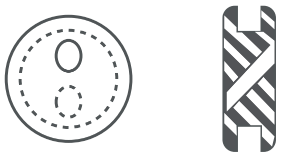
Oval Grommets



Multiple Hole Grommets

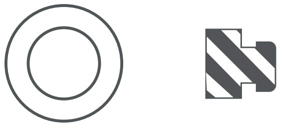


Special ID Grommets

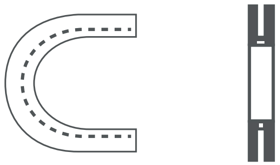


Types of Rubber Grommets

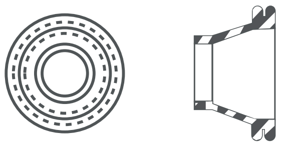
Blind and Plug Grommets



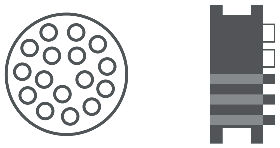
Horseshoe Grommets



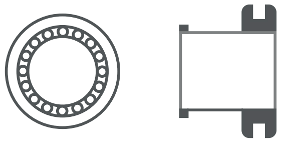
Extended Neck Grommets



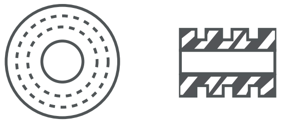
Electrical Bushings



Cord Guards



Semi-Standard Grommets



SILICONE MEDICAL & HEALTHCARE

Silicones are widely used in medical devices due to their biocompatibility, durability, and low allergy risk. Unlike PVC, they don't leach plasticizers, and unlike latex, they rarely cause allergic reactions. Applications span wound care, drainage tubes, and implants. Silicone's compatibility with body fluids and robust chemical structure make it increasingly popular However, medical technology demands high-quality, functional, and durable silicone products. Selecting the appropriate technology to customize silicone components is crucial for successful medical applications.

Benifits of Silicone Medical & Health Grade Parts

- **Biocompatibility:** Safe for biological use
- **Chemical & Bacterial Resistance:** Durable and hygienic.
- **Excellent Mechanical Properties:** High tensile strength, elongation, tear resistance, and compression resistance at extreme temperatures.
- **Optical Clarity:** Superior transparency for light transmission and illumination.

Medical Devices & Technologies

Silicone Properties

- Reduces patient risk
- Enables life-enhancing devices
- Facilitates innovation, e.g pacemakers and insulin pumps

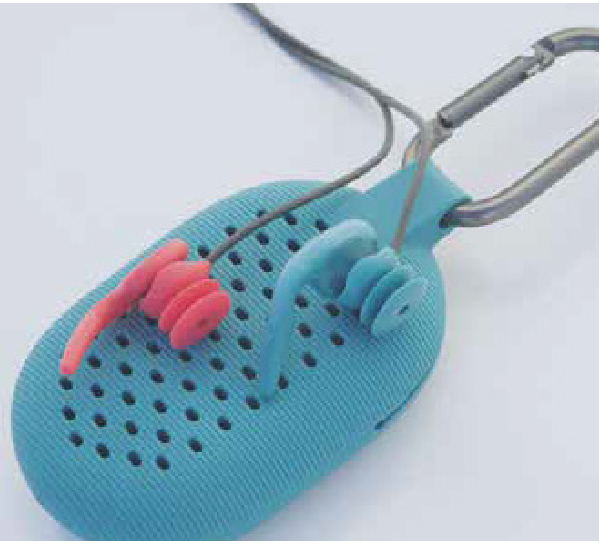
Helps Reduce pain

- Lubricates syringe operation
- Eases removal of dressings

Improves Quality of Life

Used in prosthetics
and artificial joints

Medical Silicone Molding Applications



- **Menstrual Care:** Cups
- **Wound Care**
- **Dental:** Grips, Instruments
- **Orthopaedics:** Cushions, Prosthetics
- **Respiratory:** Tubing, Anesthesia
- **Vision Care**
- **Cardiovascular**
- **Diabetes**
- **Nursing:** Pads
- **Personal Care:** Digit Covers, Facial Shields
- **Medical Devices:** Gaskets, Aspirators

SILICONE COOKWARES & TOYS

SILICONE COOKWARES

Silicone cookware offers a compelling alternative to traditional bakeware. Reusable and non-stick, it eliminates the need for greasing and reduces the need for oil or fat during cooking. Food-grade silicone is non-toxic, doesn't affect food flavor, and resists odors and fumes during cooking. This makes it a healthier and more environmentally friendly option.

Silicone cookware is also kid-friendly, featuring vibrant colors and fun shapes that are easy to handle. Its flexibility and engaging designs have made it a popular choice for modern kitchens. Key benefits include ease of use, durability, and versatility. Silicone molds can withstand high temperatures and are easily cleaned, making them a convenient and practical addition to any kitchen.

- **Tough & Durable**
- **Non-Stick**
- **Even Heating**
- **Easy to Clean**
- **Temperature Safe**
- **Microwave Safe**

SILICONE TOYS

Silicone baby toys are a popular choice for parents who want to provide their little ones with safe, durable, and engaging toys.

Few reasons why silicone baby toys are a great investment for parents

- Safe & Durable
- Stimulates sensory development
- Eco-Friendly

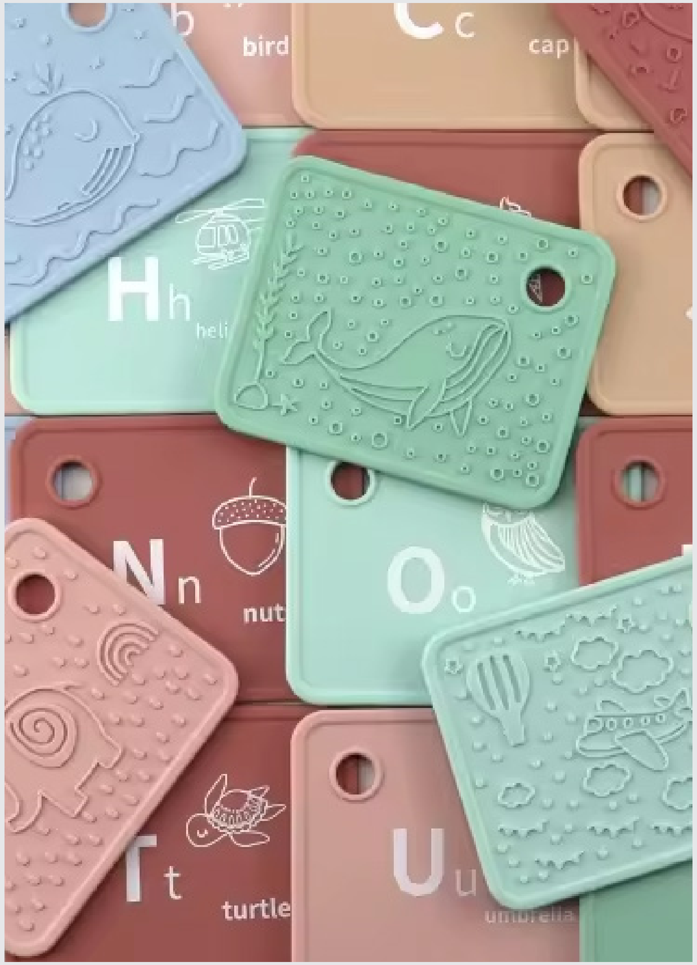
SILICONE TEETHERS

Delightful silicone teether charms soothe sore gums with charming shapes and textures. These tiny treasures engage both visually and tactilely, encouraging early sensory exploration. Crafted from high-quality silicone for safety, they offer a secure and enjoyable chewing experience. A perfect choice for both babies and caregivers.

Benifits & advantages of Silicone Teether

- **Safe & Durable:** Made from food-grade silicone, free of BPA, PVC, and phthalates. Non-toxic and hypoallergenic, posing no risk of asphyxia.
- **Easy to Clean & Maintain:** Dishwasher and refrigerator safe for easy cleaning and convenient storage.
- **Comfortable & Chewy:** Soft and chewy texture provides soothing relief for teething infants.Practical & Safe: Non-slip surface prevents slipping and has no sharp edges, ensuring safety for your baby.

SILICONE FLASH CARDS


bird
Cc
cap
Hh
heli
Nn
nut
Oo
Tt
turtle
Uu
umbrella

100% food-grade silicone flashcards are durable & safe for babies. No plastic or paper! They introduce basic shapes & patterns, fostering early language development. Interactive play is encouraged through visual association, aiding in a baby's cognitive growth.

EXTRUSION

Extrusion shapes material by forcing it through a die. The die, often steel, has a specific opening. Material under pressure passes through this opening, taking on the die's shape. This process is used to create objects with consistent cross-sections.

WHAT IS RUBBER EXTRUSION?

Rubber extrusion shapes rubber materials into desired forms. A rubber extruder machine is used to achieve this process. The rubber extruder has two main parts: a heated shearing screw conveyor and a die.

- **Material Preparation:** Raw rubber is fed into the hopper and conveyed through the extruder. The screw rotates, heating and shearing the material while pressurizing it.
- **Shape Formation:** The pressurized material is forced through the die, where it takes its final shape.

Benefits of Rubber Extrusion

Centroid Polymer Technologies utilizes high-quality rubber and blends to create custom products. Our team excels at developing solutions that with stand demanding operating conditions, including resistance to: Heat, Cold, Aging, Fatigue, Friction, Abrasion, Wear & Tear and Color Fade.

Extruded Rubber Profiles

In rubber extrusion, a ‘profile’ describes the shape of the extruded product or the die cross-section. Profiles range from simple “U” shapes to complex, intricate designs. Extruded rubber profiles include D-, e-, J-, P-, and T-shaped Profiles, U Channels, Half-round Profiles, Round Cord, Squares and Rectangles.

Rubber Materials Used

Centroid Polymer Technologies excels in meeting diverse client specifications. We maintain a substantial inventory of standard tooling and a wide range of natural and synthetic rubber compounds. Our stock includes numerous extrudable rubber compounds, ready for immediate use.

- **EPDM**
- **Neoprene**
- **Nitrile**
- **Sponge - EPDM & Neoprene**
- **Silicone**
- **Synthetic Polyisoprene**
- **FKM**
- **SBR**

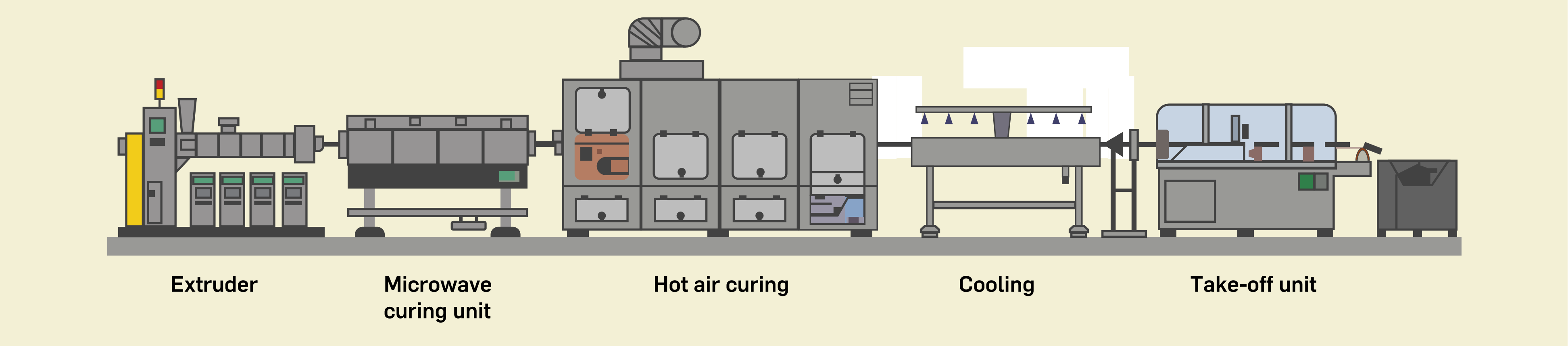
Custom Rubber Extrusion Applications

We specialize in manufacturing custom extruded rubber products. Our skilled team works closely with clients to produce high-quality extrusions that precisely meet their design specifications. We serve a wide range of applications, including

- **Sealing Fluids**
- **Conducting Fluids**
- **Storing Energy**
- **Absorbing Energy**
- **Door, Cabinet, & window seals**
- **Connectors**
- **Tubing**
- **Mandrel Formed Hose**
- **Vibration Reducers**
- **Gaskets**
- **Spliced Gaskets**
- **Window Seals for Mass Transit**
- **Pressure Switch Square Tubing**

How Rubber Extrusion Works

Rubber extrusion efficiently creates various rubber products. This cost-effective process forces uncured, soft rubber through a shaped mold using high pressure. This shapes the rubber into its desired form before vulcanization, a hardening process that transforms it into a usable final product.



Extrution Dies

Centroid Polymer Technologies excels in in-house mould development and production. Years of expertise, coupled with advanced software and cutting-edge machinery, ensure the creation of robust moulds that underpin our production process. Experience, precision, quality, and craftsmanship are core values, driving the realization of high-quality moulds that form the foundation for countless meters of end products.

Distinctive techniques mastered by our professionals

Co-extrusion Die Design:
Develop dies for complex profiles.

Specialized Molding:
1. Butyl Sealant Integration
2. Hollow Chamber Creation

SILICONE

SILICONE

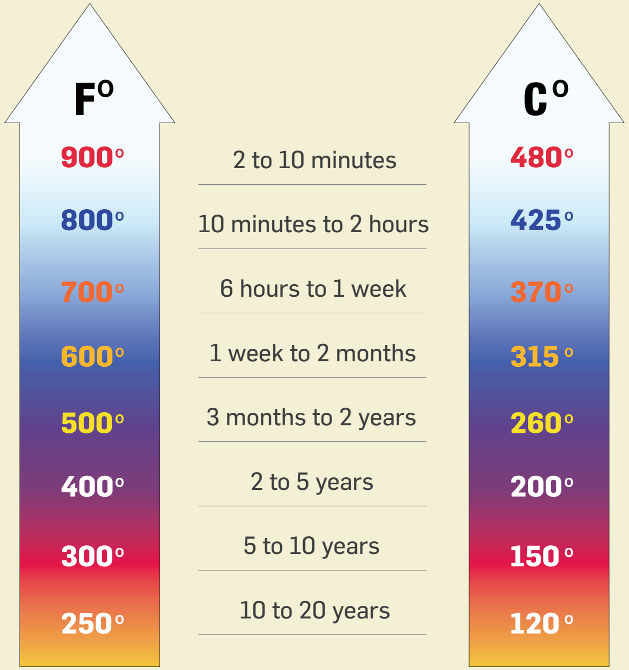
Silicones originate from silicon dioxide (SiO2), a ubiquitous compound found in nature as silica, the primary component of quartz and sand. Structurally resembling glass, silicones are composed of silicon and oxygen, yet their properties diverge significantly from other rubbers. Notably, they exhibit exceptional high-temperature resistance while maintaining flexibility in extreme cold.

Their mechanical and electrical properties remain remarkably stable across a wide temperature range. Moreover, silicones demonstrate outstanding resistance to oxygen, ozone, and weathering, including cosmic and UV radiation. Renowned for their excellent insulating properties, many silicones also exhibit favorable physiological compatibility.

Silicone's Unique Properties Make it Incredibly Versatile.

Thermal Stability

Silicone vulcanisates exhibit excellent high-temperature resistance. They withstand continuous exposure to 180°C and remain flexible at 250°C for extended periods. Short-term exposure to 300-400°C and even higher temperatures is also possible.



F°		C°
900°	2 to 10 minutes	480°
800°	10 minutes to 2 hours	425°
700°	6 hours to 1 week	370°
600°	1 week to 2 months	315°
500°	3 months to 2 years	260°
400°	2 to 5 years	200°
300°	5 to 10 years	150°
250°	10 to 20 years	120°

Flammable Properties

Silicone rubber exhibits excellent fire resistance. With a flash point around 430°C and a combustion temperature near 750°C, it demonstrates high thermal stability. Moreover, during combustion, insulating silica remains, ensuring continued insulation even after a fire event.

Flexibility At Low Temperature

Silicone vulcanisates exhibit excellent low-temperature flexibility, typically remaining pliable down to -55°C. Vulcanisates with a Shore A hardness of 50-60° demonstrate the best low-temperature performance. Notably, silicones can withstand both extreme cold and high temperatures without significant property alterations, making it highly versatile in diverse applications.

Permeability Of Gases & Liquids

Silicone rubber exhibits unique physical properties stemming from its molecular structure. Notably, it demonstrates significantly higher gas and liquid permeability compared to other elastomers, including butyl rubber. This permeability is influenced by factors like temperature and pressure differentials. As a general guideline, silicone rubber permeability can be estimated to be approximately 100 times greater than that of butyl rubber, renowned for its exceptionally low permeability.

Surface Properties

Silicone rubber exhibits both inertness and strong bonding potential. Its vulcanisates possess non-stick and hydrophobic surfaces. Conversely, it can be vulcanized with metals and glass fibers, creating robust composites. This combination of properties makes silicone a versatile material for diverse applications.

Dielectric Properties

Silicone vulcanisates exhibit excellent dielectric properties, rivaling the best insulators at room temperature. But their true advantage lies in their exceptional performance at elevated temperatures (up to 180°C), where most other materials fail. This outstanding high-temperature stability, coupled with excellent resistance to electric arcs, makes silicone rubber an ideal choice for demanding electrical applications.

Different Grades

Rubber extrusion is a manufacturing process where a heat-cured silicone (HCR) compound is formed into a continuous shape. Silicone excels as an elastomer due to its unique properties. Centroid Polymer Technologies offers a wide range of silicone extrusion solutions. We leverage a strong network of material suppliers, providing our customers with extensive material choices. Our most popular grades include :

High-Temperature Silicone working conditions up to 300°C.

Conductive & antistatic silicones available. Hardness range: 10-80 °ShA

FDA-approved silicone ensures safety. It's free from harmful chemicals and fillers that can leach out, posing health risks. This guarantees heat resistance and durability, making it ideal for medical and food applications

Metal detectable silicone is widely used in food processing and pharmaceuticals. It minimizes contamination risks by allowing easy detection of foreign objects, ensuring product safety and equipment integrity.

FMQ

Flurosilicone excels in static seals for hydraulic and fuel systems, demonstrating excellent performance in demanding straight thread sealing applications.

Platinum Cured Silicone

Platinum-cured silicone

Conductive Silicone

Conductive silicones are crucial for hardened boxes and enclosures. They provide environmental sealing while shielding sensitive hardware from electromagnetic interference (EMI/RFI). These specialized metal-filled silicones safeguard electronics in demanding environment.

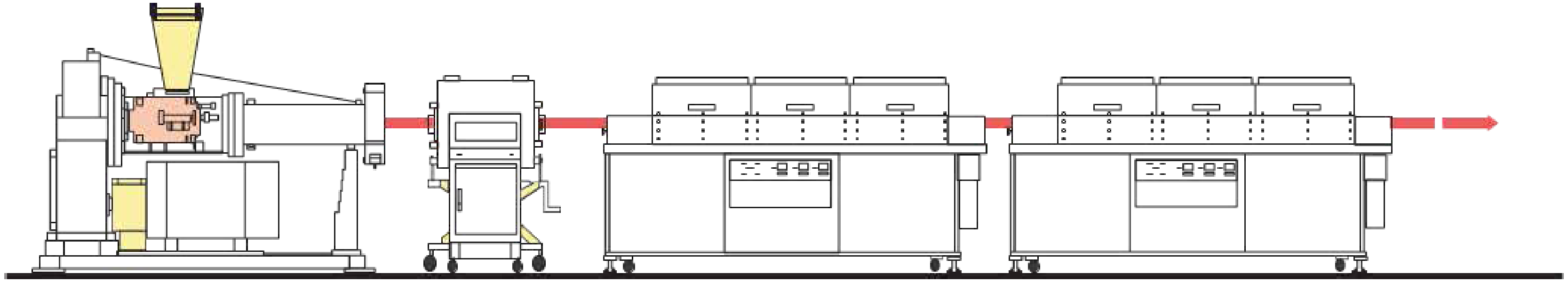
Our flame retardant silicone rubber offers low smoke, zero halogen, and low toxicity with excellent fire resistance

EN45545-2

EN 45545-2:2020 (Railway). Fire-resistant profiles for diverse industries.

Silicone Extrusion

Silicone extrusion involves feeding preform into a screw extruder. The extruder forces the compound through a hardened steel die, shaping the silicone. The extruded profile is then cured. Curing methods include hot air ovens (vertical or horizontal), steam vulcanization, salt baths, and infrared radiation. Some manufacturers prefer post-extrusion vulcanization using a saltwater through.



Pictorial representaion of Silicone Extrusion Process

Colors

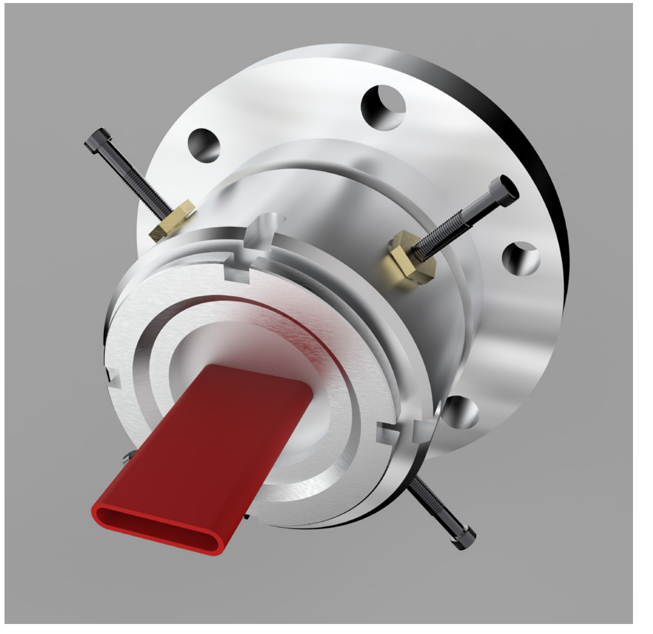
Versatile silicone products for diverse applications. Customizable color options available (RAL) to meet customer preference.

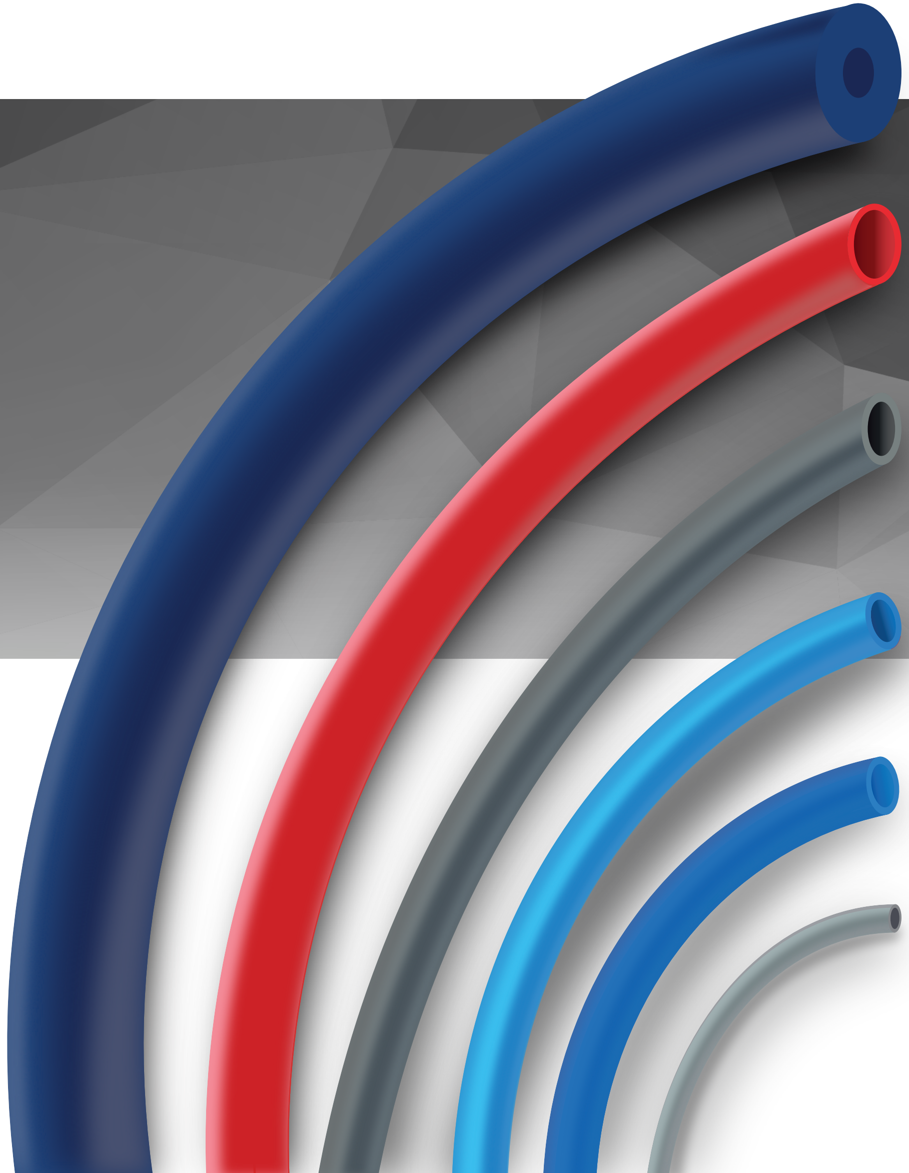
RAL
CENTROID
POLYMER TECHNOLOGIES

RAL COLOUR PALETTE

Silicone Extrusion Specs

GENERAL CAPABILITIES	Custom, Small Run, Compound Development
EXTRUSION PROCESS	Cold, Silicone extrusion
MAX. EXTRUSION WIDTH	5.0 inches (other profiles determined on a case by case basis)
MAX. EXTRUSION LENGTH	Continuous
MAX. EXTRUSION HEIGHT	5 Inches
MATERIALS	Foam Silicone, Silicon
EXTRUSION PRODUCTS	Finned Tubes, Profiles, Seals, Silicone Sponges, Tubing
EXTRUSION PRODUCT FORMS	Tubes, Shapes, Hoses, profiles
EXTRUSION FEATURES	Flexible, Food Grade, High/Low Temperature, Thin Gauge, UV/Ozone Resistant
ADDITIONAL SERVICES	Imprinting Capabilities, Converting Services
PRODUCTION VOLUME CAPABILITIES	Prototype, Small Volume, Large Volume
LEAD TIMES	Quoted on job by job basis
EFFICIENCY	Lean Manufacturing





Silicone Tubes

A silicone tube, also known as a silicone rubber tube, is a flexible cylindrical conduit made from silicone rubber through an extrusion process. This elastomer is widely used for sealing and gasketing applications in various industries.

Types of Silicone Tubes

1. “Platinum-cured Silicone Tubing & Silicone Peroxide Cured Tubing

2. Silicone Peroxide cured Tube

PLATINUM CURED SILICONE TUBING

Platinum Cured Silicone Tubes offer superior purity. Unlike peroxide-cured silicones, which release harmful chemicals during curing, Platinum-Cured only produces water as a byproduct. Ideal for medical & pharmaceutical applications, these tubes comply with strict FDA and European Pharmacopoeia regulations. Experience absolute integrity with Platinum Cured Silicone.

Suitable Media

- Water
- Air
- Cosmetics
- Dairy Products
- Gas
- Oil
- Mild Chemicals

Construction

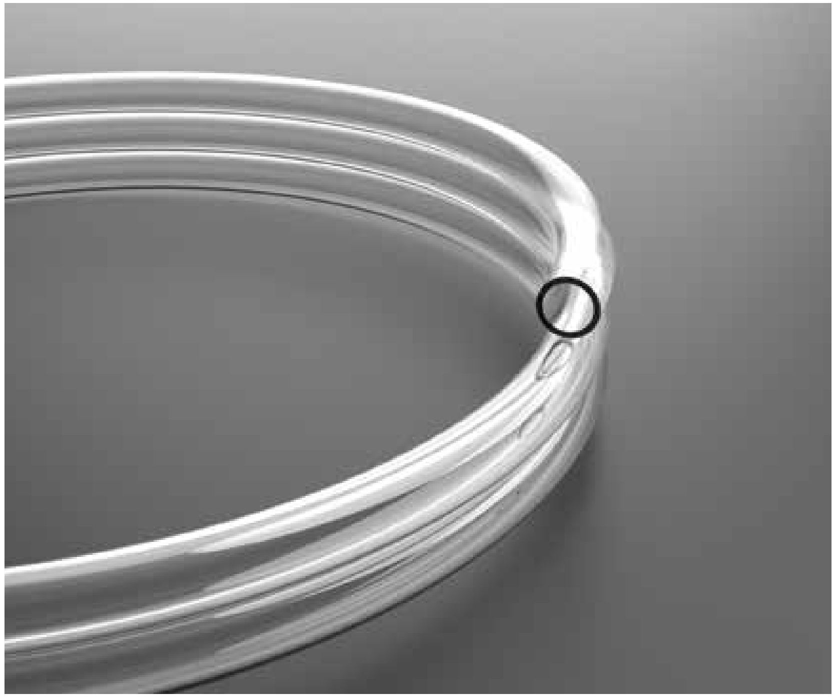
Wall
Platinum Cured Silicone

Surface Finish
Smooth

Available Colors

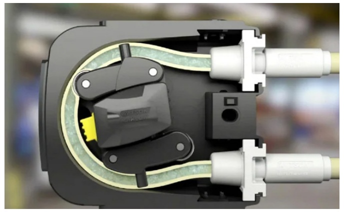
Clear
Translucent

Specifications Potential Applications



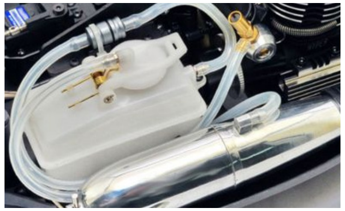
Food & beverage contact applications

Pharmaceutical industries



Peristaltic pump use

Dairy pumps



RC model car fuel tubes

Industrial manufacturers

Environment Monitoring

Biotech

SILICONE PEROXIDE CURED TUBING

Translucent silicone peroxide tubing, available in various diameters, is suitable for general-purpose pump and transfer applications in industrial and automotive sectors. It withstands temperatures up to 200°C and meets FDA guidelines. Ideal for applications not requiring high purity, critical dosing, or repeated sterilization. Supplied in non-sterile, heat-sealed polybags.

Peroxide-cured silicone rubber tubing is an affordable option and suitable for many general tubing applications.

Biocompatible: Non-reactive with tissues and fluids. Meets USP Class VI requirements.

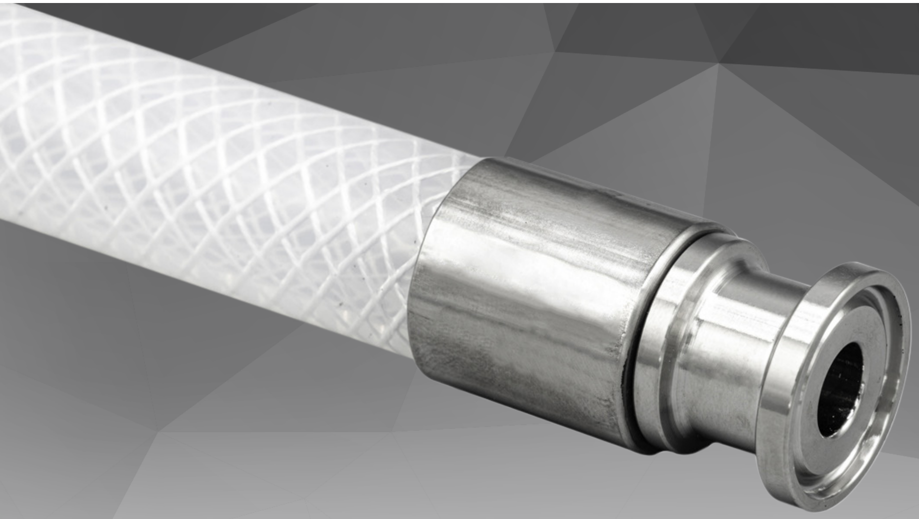
Surface Properties: Resists sticking, encrustation, and bacterial growth.

Soft & Pliable: Flexible and easy to handle.

Sterilizable: Withstands repeated sterilization (note: avoid prolonged high temperatures).

Translucent & Inert: Allows for visual flow monitoring. Odorless, tasteless, and non-toxic.

Limited Applications: Not suitable for implantable use. Requires sterilization before use.



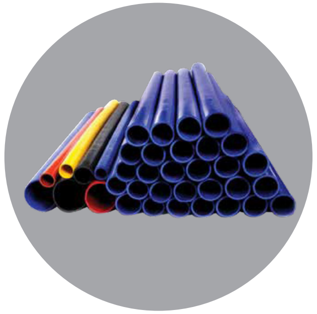
Silicone Hoses

Centroid Polymer Technologies offers high-pressure, high-temperature silicone hoses and tubing with Durable & resistance to aging, weathering, radiation, and harsh chemicals. Available in standard and premium cures, with customizable options, these hoses deliver reliable performance at competitive prices.

Types of Silicone Hoses

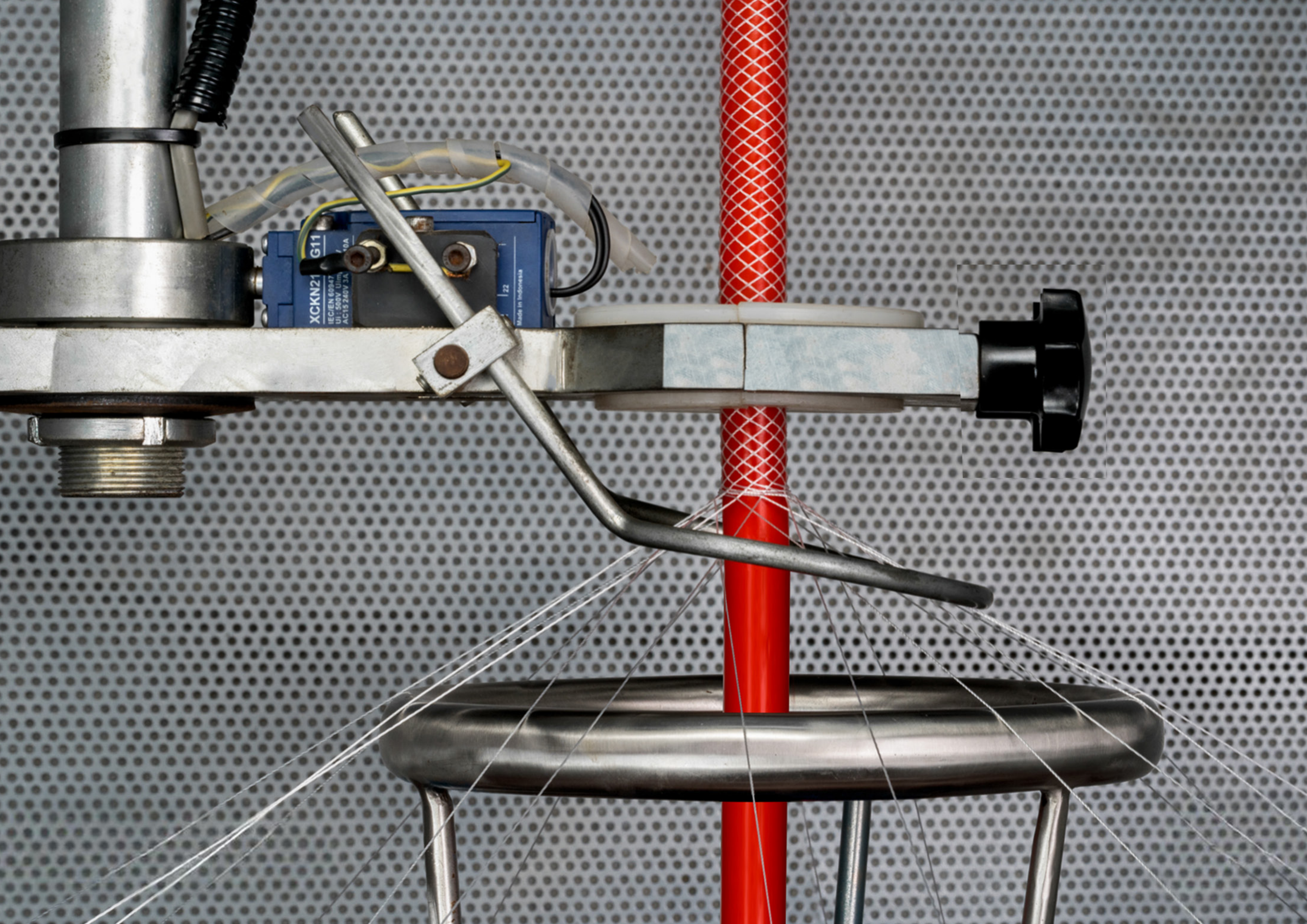
1. Platinum-cured silicon Hose

Platinum cured silicone hose has a silicone liner, polyester braid reinforcement and silicone cover. It's nonreactive, antibacterial, and sterilizable. Avoid sharp fittings and continuous steam. Replace if it becomes gummy.



2. Silicone Peroxide Cured Hose (Heater Hose)

Peroxide-cured braid-reinforced silicone hose (silicone/polyester/silicone) resists material adhesion & withstands low-pressure sterilization. Not for continuous steam, implants, or if gummy after sterilization.

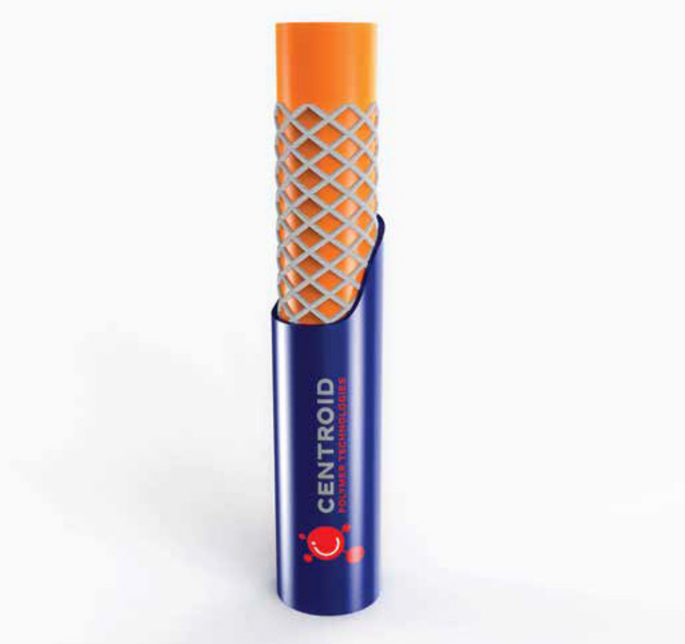

XCKN21 G11
IEC/EN 60947
Ui : 500V Uimp
AC15 240V 3A
Made in Indonesia

SILICONE BRAIDED HOSES (SILICONE TUBING WITH REINFORCEMENT)

The composition of our platinum-cured silicone braided hose involves a liner of silicone elastomer, an open polyester braid reinforcing layer, and a covering of silicone elastomer. The braid reinforcement allows for increased pressure usage compared to unreinforced silicone tubing.

This platinum-cured silicone braided hose contains no plasticizers, and its surface properties resist encrustation and prevent bacteria growth. It is non-reactive with body tissues and fluids. Care is recommended when selecting and applying fittings and clamps, as sharp barbed fittings or unlined metal clamps could tear into the hose wall, potentially leading to hose failure. Our platinum-cured silicone braided hose should not be used for steam transfer or continuous steam operation. Steam for sterilization is the only recommended exposure to steam. If exposed to repeated steam sterilization or long-term high temperatures or pressure, silicone will eventually become gummy and should be replaced.

SILICONE HEATER HOSE SAE J20 R3



Heater hoses move hot engine coolant to the heater core, warming the cabin. They then return the cooled coolant back to the engine.

Extruded Silicone core is wrapped in polyester and covered with silicone.

Radiator Cooling System

Biotech & Pharmaceutical fluid transfer

Scientific & Laboratory

Marine & Industrial

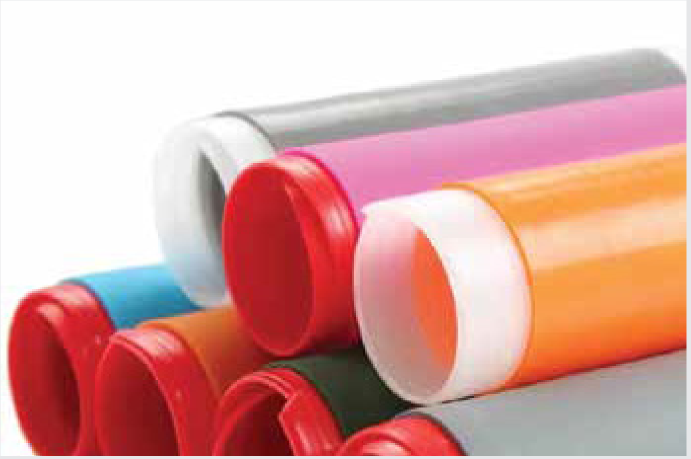
Food & Beverage Industry

HEAT SHRINKABLE SILICONE TUBING

Our heat-shrinkable silicone rubber tubing is specifically designed to insulate, protect, and coat electronic components with special requirements. It is widely used in the electronic, lighting, and medical equipment industries. Its key advantage over other tubing is its ability to withstand temperatures up to 200°C.

PROPERTIES	FLAME RETARDANT TYPE	NON-FLAME RETARDANT TYPE
Tensile strength	4.0MPa	6.9MPa
Ultimate elongation	150%	200%
Tear strength	10KN/m	14KN/m
Volume resistivity	2×10^{12}m (2×10^{14} Ω cm)	2×10^{12} Ω·m (2×10^{14} Ω·cm)
Dielectric strength	20kV/mm	20kV/mm
Dielectric constant (E)50HZ	3.2	3.2
Dielectric loss angle tangent 50HZ	0.001	0.001
Operating temperature	-50C ~ 200C	-5C ~ 200C
Shrink temperature	>90°C	>90°C

COLD SHRINK SILICONE TUBING



Cold Shrink Tubing is a type of tubing that shrinks in normal temperatures, so no heat is required to cause shrinking. With cold shrink tubing, it is easy to insulate, connections, repair, and bundle the wires. Although it functions just like heat shrink tubing, but safety is the prime concern, cold shrink tubing is best suited when the environment is potentially explosive or flammable, It is also suitable for narrow spaces in many industrial environments.

Applications

Cold Shrink Silicone Rubber Sleeve of Cable Joint Protection for Coaxial Cables, Jumpers, DIN Connectors, Connectors, N-type Connectors, etc., of Communication Base Station.

Cold Shrink Silicone Rubber Sleeve for handles, suitable for application to various handles of fishing rods, rackets, paddles, athletic equipment, and industrial hand tools.

Extruded Silicone Profiles

We extrude silicone profiles in a wide hardness range (20° to 80° Shore A) and a variety of colors, including custom matches to RAL and Pantone standards. Our skilled staff ensures precise color matching to customer samples. Extrusions typically adhere to ISO 3302-1:2014 E3 tolerances, with tighter tolerances available upon request. Silicone offers exceptional properties: high/low-temperature stability (-50°C to +220°C, reaching -90°C to +315°C with specialized formulations), excellent electrical insulation, easy sterilization, good chemical resistance, and the option for transparent or colored profiles.

We specialise in the manufacture of complex profiles and are able to produce

- Single hollow voids
- Multiple hollow voids
- Irregular shapes
- Small profiles
- Large profiles (our maximum tool size is 152mm diameter)

Applications

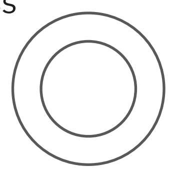
Extruded silicone profiles find wide application in various industries for seals and gaskets. Their versatility extends beyond these, limited only by imagination.

- Electrical Insulation
- High-Temperature Applications (Ovens)
- Architectural Applications (Windows)
- Food Industry
- Medical Applications (Autoclaves)
- Industrial Applications (Textile, Manufacturing)
- Lighting Industry
- Specialized Applications (Nuclear, Railway)

Extrusion Profile Examples

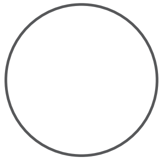
Tubing

0.3mm - 75mm inner diameter
0.2mm - 25mm wall thickness



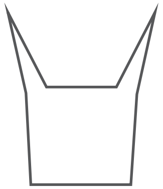
Cord

0.2mm - 50 mm diameter



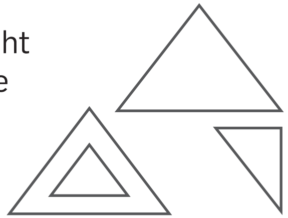
Autoclave Seal

6mm - 50mm height
6mm - 50mm base
including steam resistant



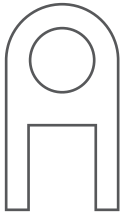
Triangular section

6.4mm - 50mm height
6.4mm - 50mm base



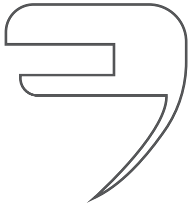
Channel Tube

4mm - 30mm tube section
Various channel dimensions
and bulb shapes



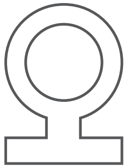
Flap Seal

From 1mm - 20mm
channel gap
Various flap dimensions



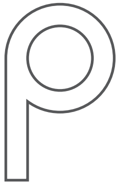
Omega Tube Section

4mm - 50mm tube section
Various 'T' section base
dimensions



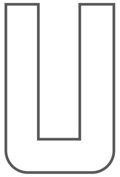
'P' Tape

3.5mm OD - 50mm OD (bulb)



'U' Channel

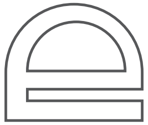
0.5mm - 60mm (slot)
Various heights & widths



Extrusion Profile Examples

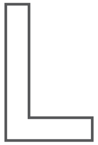
‘e’ Section

10mm - 50mm base
6mm - 25mm height
Various channel gaps



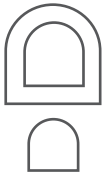
‘L’ Section

1mm x 1mm to
50mm x 50mm section
Various height and base
dimensions



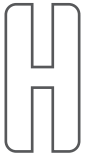
‘D’ Section

6mm - 50mm base
6mm - 50mm height
Solid ‘D’ sections also
available



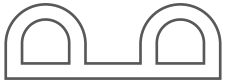
‘H’ Section

Various channel gaps
From 50mm overall height
Various widths



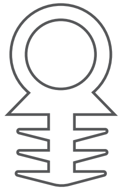
Double ‘P’

3.5mm bulbs
to 30mm dia bulbs
Various widths to
60mm wide



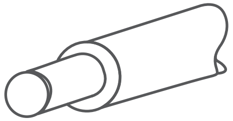
Custom Design

Custom channel seals
are one of hundreds
available



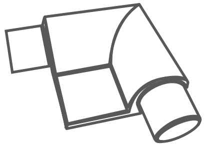
Co Extrusion

Sleeving sponge,
wire or lights in
silicone rubber



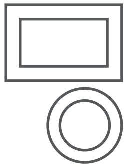
Vulcanised/Moulded Corners

Hollow corners with
the best strength and
appearance combination



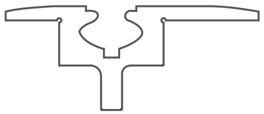
Picture Frame & ‘O’ Ring Gaskets

Cut and press joined from
extruded profile with colour
matched strong adhesive

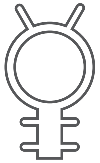


Extrusion Profile Examples

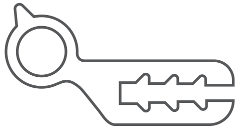
T - irregular Shape



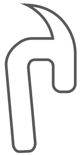
Bubble Seals



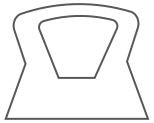
Lip Seal



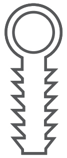
h - irregular Shape



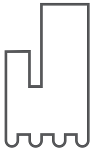
Key Hole Section



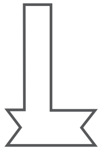
Tadpole Section



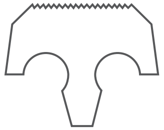
L - irregular Shape



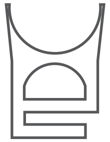
L - irregular Shape



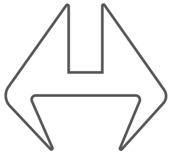
T - irregular Shape



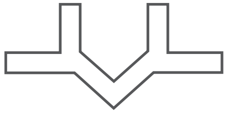
e - irregular Shape



U - irregular Shape



U - irregular Shape



SILICONE INFLATABLE SEAL

Inflatable seals are hollow extruded profiles that form an airtight seal when inflated. They provide a flexible and adjustable sealing solution.

Applications

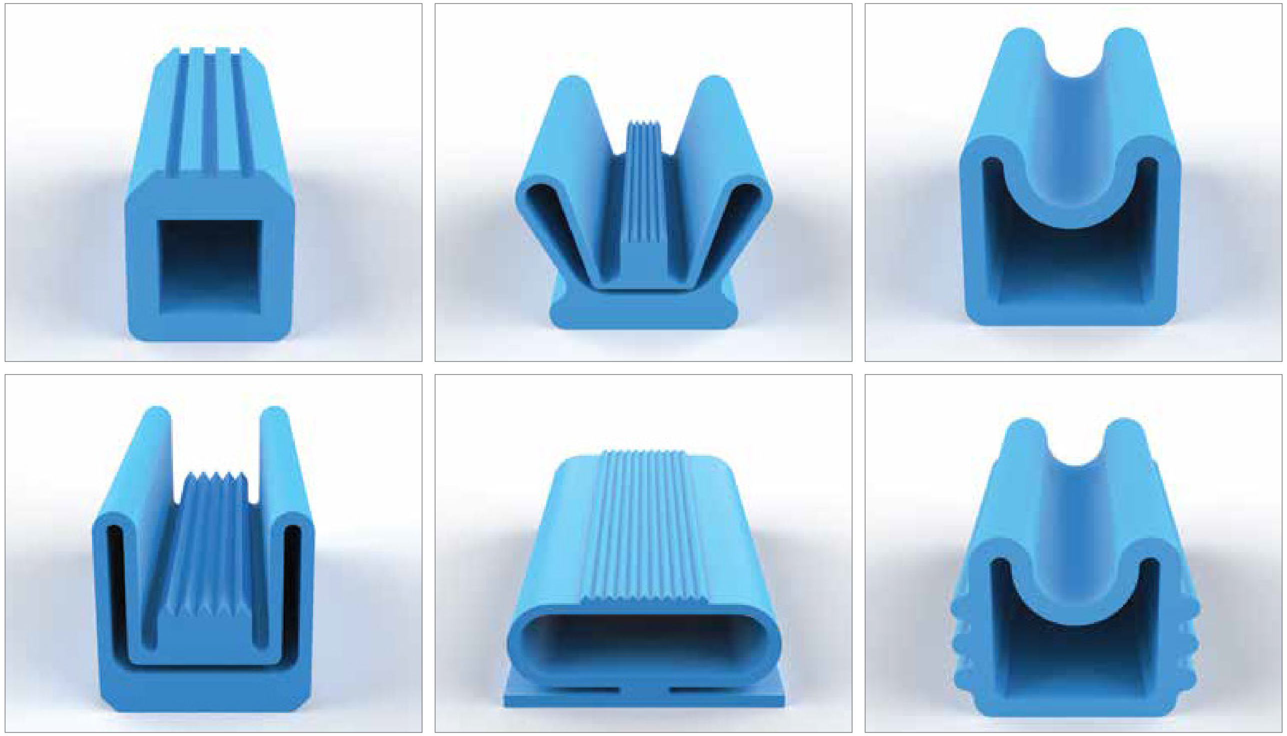
Industrial Applications: (Iron & Steel, Mineral Processing, Chemical Processing, Textile)	**Infrastructure:** (Rail & Tramways)
Heavy Industry: (Waste Incinerators)	**Manufacturing:** (Metalworking, Food Processing)
Pharmaceutical	**Telecommunications**
Construction: (Door & Hatch Seals)	**Specialized Applications:** (Sand Filling Systems)

We offer flexible production, from small orders (min. 10m) to large-scale runs. Our expertise lies in manufacturing complex silicone profiles, including:

Single & Multiple hollow voids

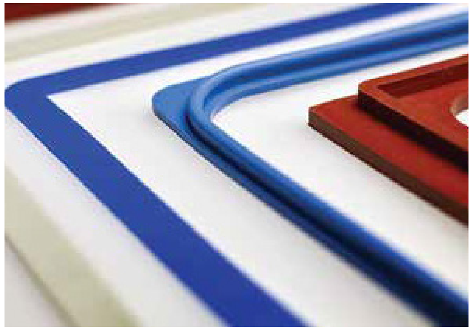
Irregular shapes

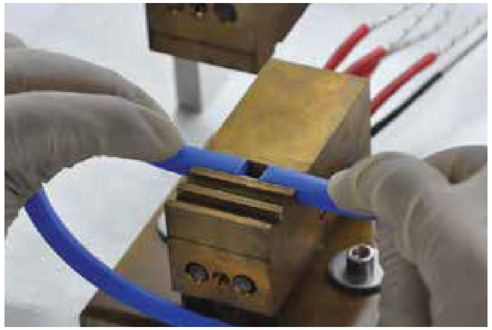
Small & Large profiles
(our maximum tool size is
152mm diameter)



Cut to Length Silicone Profiles & Joined Rings

We offer custom cutting of silicone profiles to any length. Our in-house equipment ensures precision and efficiency. We also specialize in joining silicone profiles. Our presses enable the creation of glued or vulcanized rings in any size.





Adhesive Backed Silicone Profiles

Centroid Polymer Technologies provides high-quality, reliable adhesive backing for flat sheets, punched gaskets, and extruded profiles. This service enhances efficiency in various applications. Years of development have resulted in a robust adhesive and liner application process. We believe we offer a market-leading solution for adhesive-backed components.

Availability

Hardness Range	10-90 Shore A
Temperature Range	High Temp (570°F), Low Temp (-100°F)
Industry Standards	A-A-59588, SAE-AMS, ASTM D2000
Regulatory Compliance	USP Class VI, UL94 V-0, NSF
Conductivity	Electrically Conductive Options
Color Matching	Custom Color Matching

Formulations	Platinum Cured, Special Formulations
Applications	Medical, Pharmaceutical, Automotive, Industrial
Processing	Cut to Length, Joined to Gaskets
Adhesive Backing	Options (AA1, AA2, AS1)
Overprinting	Available
Tooling	Wide Range of Tools Available

**We supply Silicone rubber profiles with adhesive backing.
Choose from standard or specialist tapes to suit your needs**

- **D Section**
- **Box Section**
- **L Section**
- **P Section**
- **E Section**
- **U Channel with Bulb**
- **U Channel**
- **Tadpole**
- **Trapezium**
- **T Section**
- **Lip Seal**

We supply Silicone rubber profiles with adhesive backing. Choose from standard or specialist tapes to suit your needs

Fine material with good elasticity

Transparent adhesive backing

SILICONE FOAM & SPONGE

Silicone sponge comes in two primary types: open-cell and closed-cell. Open-cell sponge has interconnected cells, allowing water, moisture, and particles to pass through. Closed-cell sponge has sealed cells, trapping air within each for a soft, padded feel. This closed structure prevents water, moisture, and dust from entering, making it ideal for sealing applications where exclusion is crucial.

Silicone Sponge Extrusion

Centroid Polymer Technologies specializes in manufacturing high-quality silicone sponge extrusions. We offer a wide range of shapes, densities, and colors. Our closed-cell sponge features a smooth surface and provides excellent sealing properties. Leveraging the inherent benefits of silicone rubber, our sponge offers superior sealing performance with reduced compression forces.

Sponge Extrusion Applications

Electrical & Electronics	Enclosures, Insulation, Photocopiers
Automotive	Seals, Rollers
Architectural	Doors, Windows, Glazing
Industrial	HVAC, Ovens, Kilns, Test Chambers
Transportation	Locomotives, Carriages

Outdoor Applications	Lighting, Signage
Domestic Appliances	
Environmental Sealing	
Thermal Insulation (Hot & Cold)	
Specialized Applications (e.g., Medical, Aerospace)	

Silicone Sponge Grades

Silicone Sponge Cords and Tubing

Centroid Polymer Technologies specializes in producing Sponge Tubes and cords from 2mm to 85mm in diameter and we maintain extensive stocks of standard-sized cords and sponge tubing, which can be supplied in coil form, cut to specific lengths, or joined into rings to meet diverse customer needs.

Silicone Sponge Sections

Centroid Polymer Technologies specializes in producing bespoke silicone sponge profiles tailored to customer specifications. These profiles are available in coil form, cut to length, or joined into gaskets, with the option of self-adhesive backing (SAB) if required. They manufacture square and rectangular sponge sections in sizes ranging from 2mm to 50mm in thickness and 3mm to 90mm in width, maintaining large stocks of popular sizes to ensure flexible and timely supply.

Special Grades

We specialize in advanced silicone formulations for challenging applications. Through continuous development and refinement, we deliver a comprehensive range that meets stringent indus try standards and evolving customer requirements.

V-0 – EN45545-2, NFPA-130 & UL94 V0
THT – High Temperature (+270°C)
FDA – Food Grade
LCH – Low Smoke & Toxicity

EMI SHIELDING SILICONE

Our EMI-shielded products range from electrically conductive elastomers in molded, extruded, die-cut forms. EMI is a type of electromagnetic radiation that has the potential to harm, reduce, or interrupt the operations of electronic equipment and gadgets. Electromagnetic interference can move along electronic systems, cables, and conductors.

EMI Shielding gaskets and materials protect electrical equipment from harmful Electromatic Interference (EMI) and Radio Frequency Interference (RFI). This material creates a conductive path through the seams and other openings in an electronic enclosure to establish smooth current flow and prevent destructive radiation from interfering with performance by completing a Faraday shield around the electronics.

Centroid Polymer Technologies EMI Shielding material include:
Silver-filled silicones with pure silver particles for maximum EMI shielding effectiveness Nickel graphite-filled silicones that balance concerns about cost with demands for performance Aluminum-filled silicones with cost-effective, silver-plated aluminum particles

SILICONE THERMAL PADS

Silicone-based thermal transfer material effectively fills gaps between heat-generating components and cooling solutions, offering great adaptability through customizable hardness, adhesion, glass fabric reinforcements, and thickness adjustments for optimal fit. These thermal pads feature inherent adhesion for easy assembly and removal, with a working temperature range from -50°C to 200°C.

When choosing between paraffin wax, acrylic, or silicone thermal pads, it's important to select a safe, non-toxic, non-curing material that ensures maximum thermal conductivity. Silicone thermal pads fulfill all these criteria, making them the ideal choice for diverse computer systems. Here are seven reasons to consider silicone pads as the best option.

Features

- Extreme Thermal Conductivity
- Electrically Insulative
- Wide Operating Temperature Range
- Wide Range of Applications
- Easily Compressed
- Easy to Cut
- Safe To Use

Main Applications

- Automotive
- Electronics & Electrical
- Lighting
- Energy Storage (Batteries for e-mobility)

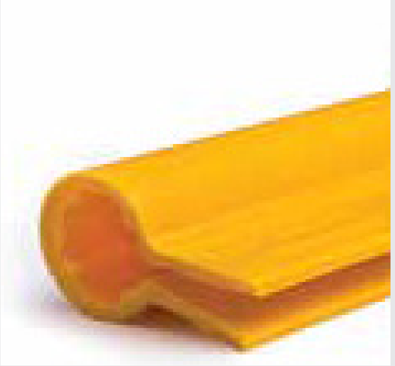
SILICONE ELECTRICAL CONDUCTOR LINE INSULATING SLEEVES

Centroid Polymer Technologies offers high-quality silicone conductor cover sleeves for substation leads and jumpers. These sleeves, crafted from a non-tracking silicone material, provide excellent electrical insulation in medium-voltage outdoor environments.

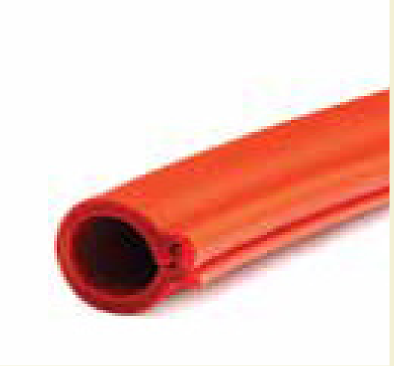
The silicone rubber exhibits exceptional properties: anti-aging, corrosion resistance, high corona resistance, and outstanding temperature performance, makingit ideal for protecting bare wires. Widely used in substation protection and railway catenary systems, these sleeves significantly reduce the risk of cross-line issues.

Types of Silicone Electrical Conductor Line Insulating Sleeves

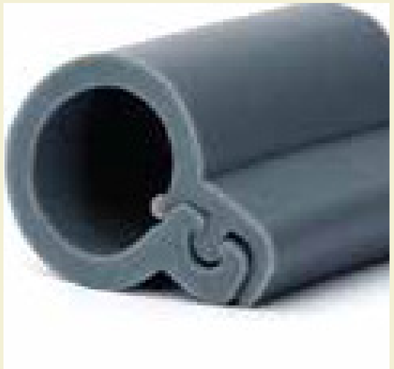
Centroid Polymer Technologies manufactures four different types of silicone electrical conductor line-insulating sleeves.



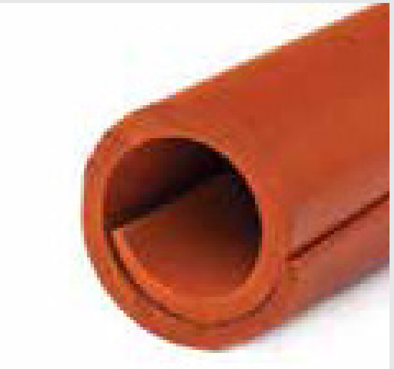
Silicone Electrical conductor Line Insulating Sleeves Button lock Type (SECLIS BLT)



Silicone Electrical conductor Line Insulating Sleeves Press Lock Type (SECLIS PLT)



Silicone Electrical Conductor Line Insulating Sleeves Double Lock Type (SECLIS-DLT)



Silicone Electrical conductor Line Insulating Sleeves Self Lock Type (SECLIS SLT)

SILICONE SELF-FUSING TAPE

This silicone rubber tape self-fuses to create a flexible, homogeneous barrier. It quickly tacks, forming an airtight and watertight seal within minutes. Full fusion occurs within 24 hours. Ideal for electrical insulation, it provides excellent protection for motor and generator coils and leads. Easily removable without leaving residue.

Features

- **Quick acting :** Starts to tack instantly and forms a permanent bond within 24 hours
- **Sealing :** Forms a homogeneous, void-free, air- and watertight seal
- **No adhesive :** Can be applied to unclean surfaces and leaves no residue behind
- **Protects :** Against UV, ozone, fungus, salt water, fuels, oils, coolants, acids, and cleaners
- **Flexibility :** Remains flexible even when exposed to abrasion and temperatures down to –65°C
- **Insulation :** Provides up to 8000 volts at 0.5mm thickness
- **Fire and heat resistance :** Can be made to meet fire-resistantand fireproof specifications, and can function without melting above +260°C
- **Electrical advantages :** Silicone tape has superior arc and corona resistance

- **Custom designs :** available to meet a wide range of applications
- **Self-fusing silicone tape contains no adhesive :** which makes for residue-free installation and removal and, unlike traditional adhesive based tapes.

Applications

Insulation for electrical systems
Protection for motor and generator coils and leads without any residue left behind on removal

Harness wrapping and wire bundling
Meets Class H insulation requirements. Easy application and removal

Splicing, terminating, and bonding
Ideal field repair system. Significantly easier and cleaner application than traditional tapes and potting compounds

Aircraft applications
Flame retardant versions available to secure insulation to hot air ducting

Automotive applications
Easily installed as a battery weather wrap to prevent corrosive buildup on terminals

WHAT IS A BUTYL SEALANT ?

"Butyl Sealants" are 'non-elastic, permanently plastic sealants" for interior/ exterior use. They are based on non-vulcanized rubber formulations.

Advantages

Butyl Sealants: Interior & Exterior

- **Permanent Plasticity:** Non-reactive and self-healing.
- **Excellent Adhesion:** Bonds to various substrates, including
- **Challenging ones like PE, PP, and EPDM.**
- **Temperature Resistance:** Operates from -40°C to +120°C.
- **Chemical Resistance:** Resistant to water, moisture, and aqueous solutions.
- **Weather & Aging Resistance:** Durable against environmental factors.
- **Minimal Preparation:** Requires minimal surface preparation.
- **Environmental Friendliness:** Eco-friendly throughout its lifecycle.

COMPREHENSIVE RANGE OF BUTYL TAPES CATERING FOR MANY APPLICATIONS

ELECTRICAL

Butyl tape : Superior waterproofing for low-voltage cable connections. Our electrical-grade version offers exceptional electrical insulation.

MARINE

Butyl sealant tape is vital for marine vessels. Applied to seams, joints, and gaps, it creates a watertight seal, protecting boats and ships from water damage.

ROOFING

Butyl tape seals roofing and cladding joints. It's ideal for side and end lap joints. For large corrugated sheets, use the bead section designed for end lap profiles.

COMPOSITES

Vacuum bagging creates high-quality composites by compressing resin- saturated laminates under a vacuum. Centroid Polymer Technologies offers sealant tapes for successful vacuum bagging, regardless of cure temperature.

AUTOMOTIVE, BUS, & TRAILERS

Butyl tape seals it all in the automotive world: sunroofs, doors, lights, caravans, buses, and trailers. It creates weather proof barriers and seals gaps, ensuring durability and performance.

WATER TANKS & GRAIN BINS

Water Tank Butyl Tape is a non-toxic, ever-tacky, waterproof sealant for flange joints, approved for drinking water contact, and effective in protecting grain bins from leaks.

DUCTS AND VENTS

Butyl tape is the go-to for HVAC duct sealing. It creates air, dust, and watertight barriers around joints and seams, outperforming other sealing methods in the heating and ventilation market.

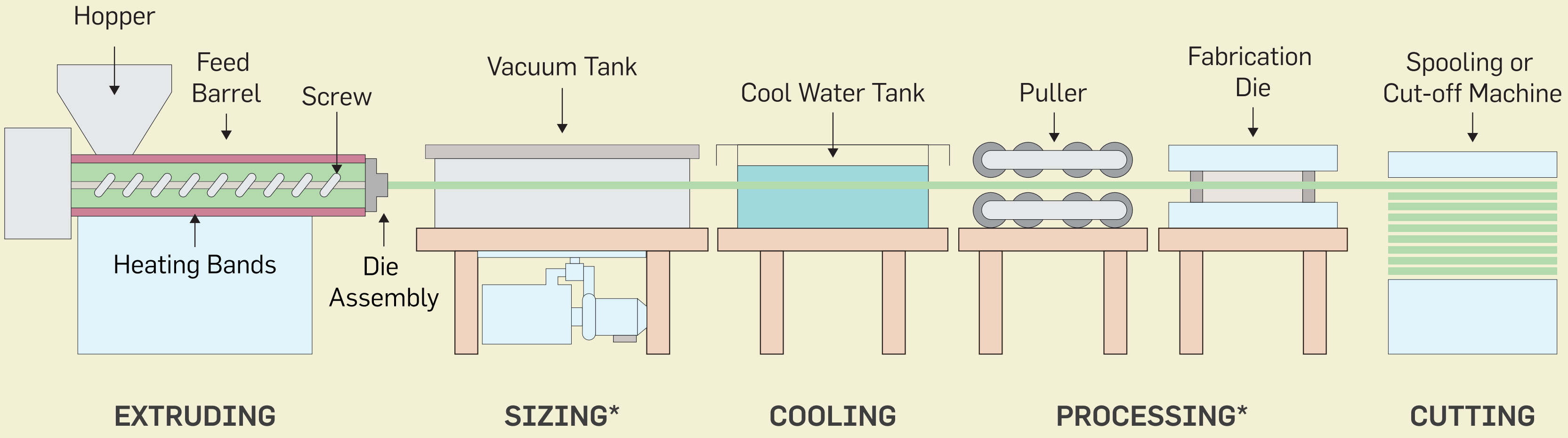
PIPELINE

Butyl tape is ideal for underground pipelines. Its resilience, flexibility, and moisture-resistance ensure a strong, long-lasting seal, even in harsh conditions.

PLASTIC EXTRUSION

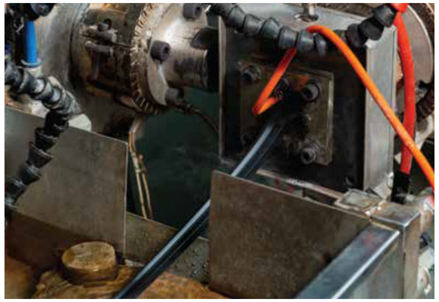
Plastic Extrusion Process

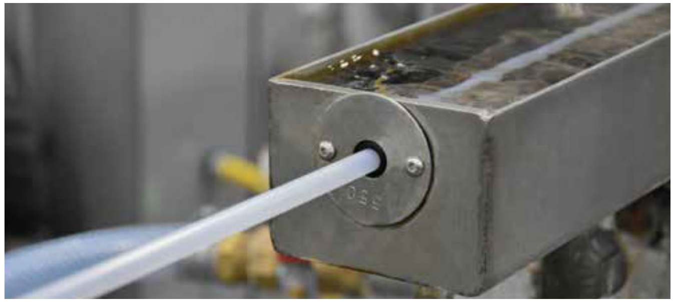
Plastics extrusion is a continuous, high-volume manufacturing process. Raw plastic, such as pellets or granules, is fed into an extruder barrel. Within the barrel, mechanical energy and heat melt the material. The molten polymer is then forced through a die, shaping it into a continuous profile. This profile hardens upon cooling.


Hopper
Feed Barrel
Screw
Heating Bands
Die Assembly
Vacuum Tank
Cool Water Tank
Puller
Fabrication Die
Spooling or Cut-off Machine
EXTRUDING
SIZING*
COOLING
PROCESSING*
CUTTING

Process Descriptions

Plastic extrusion involves melting and shaping polymer materials into continuous profiles. Raw material, typically in the form of resin pellets, is fed from a hopper into the extruder barrel. Additives like colorants and UV inhibitors can be pre-mixed with the resin. The extrusion process itself is continuous, transforming the raw material into a desired shape through a heated screw and die.





We Support You from Start to Finish With Our Plastic Extrusion Tooling Capabilities Accelerate your product launch with our in-house plastic extrusion tooling development. Utilizing state-of-the-art technology, we ensure rapid tooling creation and enhanced quality control.

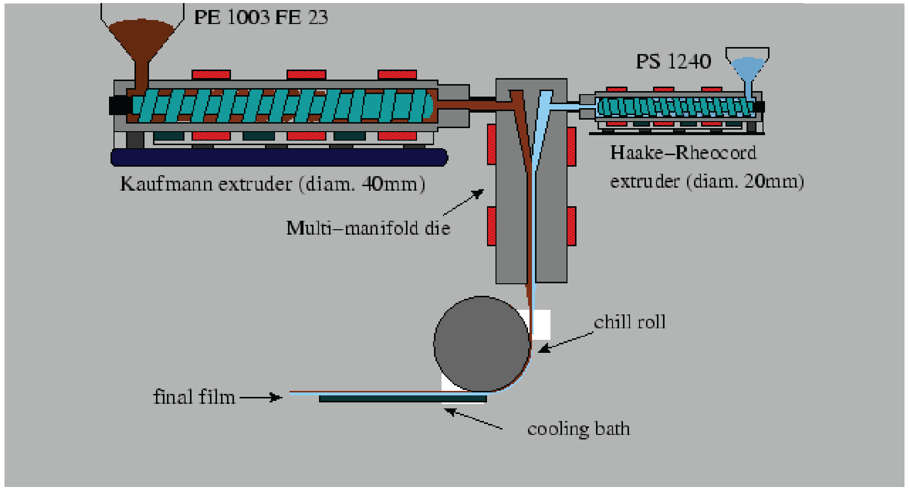
Core Plastic Extrusion Capabilities Include

- **Single & dual-durometer profile extrusions**
  1. Rigid
  2. Flexible
  3. Co-extrusion
- **Vacuum calibration**
- **Automated inline fabrication**
- **In-house Plastic extrusion tooling**
- **Custom plastic fabrication**
- **Inline taping**
- **Embossing**
- **Printing**
- **Special packaging**
- **Assembly**
- **Mylar film application**

Co-Extrusion Of Plastic Materials

Combine Two Different Raw Materials Into One Extruded Plastic Profile.

Co-extrusion is a versatile manufacturing process that combines two or more plastics into a single product. This technique allows for the creation of materials with unique and enhanced properties, such as increased strength, corrosion resistance, and improved insulation.The process involves extruding multiple thermoplastic materials through a single die with multiple openings. These materials merge and fuse together, forming a single, multi-layered part. This allows for the combination of different materials with varying properties, such as rigid and flexible materials, or materials with different colors (e.g., clear and opaque). Co-extrusion offers significant advantages, enabling the production of complex products with tailored properties that would be difficult or impossible to achieve with single-material extrusion.


PE 1003 FE 23
PS 1240
Kaufmann extruder (diam. 40mm)
Haake–Rheocord extruder (diam. 20mm)
Multi–manifold die
chill roll
final film
cooling bath

Co-Extrusion Benefits Over Traditional Manufacturing

- **Enhanced Durability**
- **Improved Efficiency by reducing manufacturing costs with shorter lead times.**

Industries Relying on Co-Extruded Plastics & Tubing

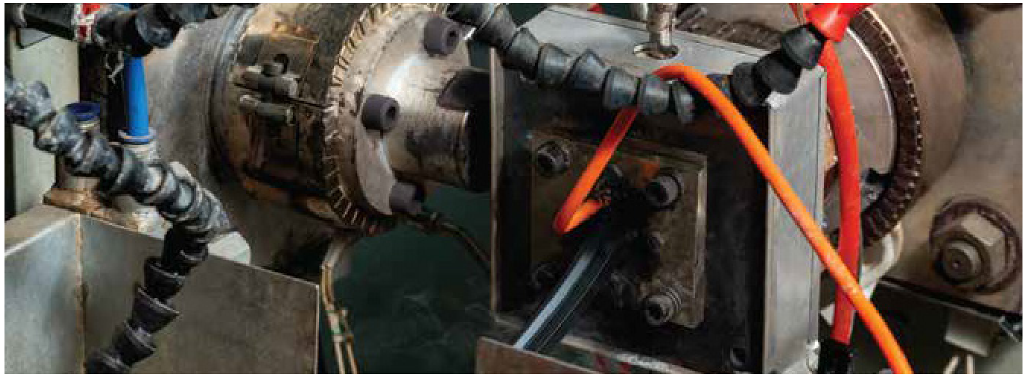
Industries Relying on Co-Extruded Plastics & Tubing

Automotive

Construction

Packaging

Medical

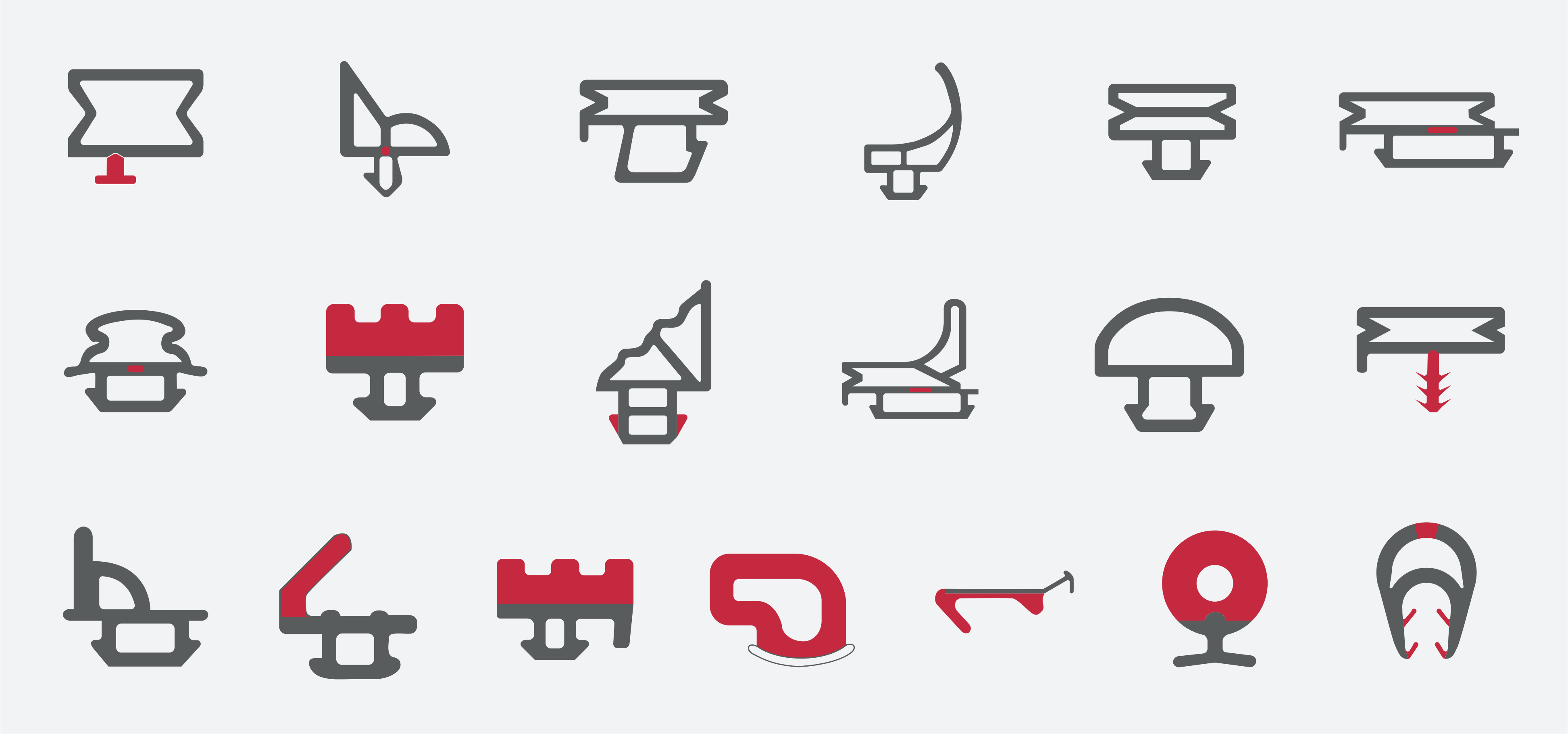


Benefits of Co-Extrusion

- **Faster Turnaround**
  Fewer production steps lead to quicker delivery times.
- **Cost-Effective**
  Reduced labor and potential for using more economical materials.
- **Enhanced Material Properties**
  Combine diverse materials for optimal performance (e.g., flexibility, rigidity, color variations).

Dual Durometer Co-Extrusion

We extrude single parts combining hard and soft polymers in a single process, enabling multi-functional designs.



THERMOPLASTIC ELASTOMERS (TPE)

Thermoplastic Elastomers (TPEs are versatile materials combining the processability of plastics with the rubber-like flexibility of elastomers. They are customizable, enabling engineers to tailor properties like flexibility and durability for specific applications. TPEs offer a cost-effective alternative to silicone in various industries, finding widespread use in medical equipment and consumer products.

Reduce Your Product's Carbon Footprint with Us

Thermoplastic Elastomers (TPEs) combine the flexibility and elasticity of rubber with the processability of thermoplastics. They can be melted and reshaped repeatedly, making them both durable and environmentally friendly. This unique characteristic allows for efficient manufacturing and the potential for recycling.

We produce TPE rubber extrusions in a wide variety of vibrant and translucent colors. Our non-staining TPE rubber complies with relevant industry standards. Extruded profiles come in various shapes, including U-channel, P-channel, and D-channel, among others. These represent standard profiles commonly used in various industries.

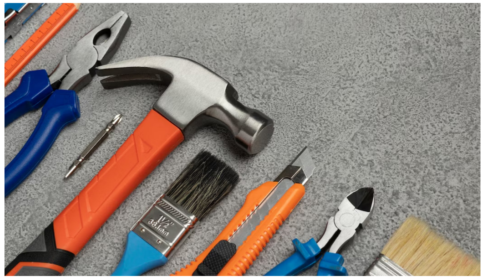
TPE Properties

Common Name	**Thermoplastic Elastomers or Thermoplastic Rubber**
Temperature Range	
Low Temperature Usage	-30 ° F
High Temperature Usage	Up to: 250 ° F
Tensile Strength	
Tensile Range:	500-2500 P.S.I.
Elongation:	600% Maximum
Durometer (Hardness)	
Chemical & Environmental Resistance	
Aging Weather	Excellent
Tear Resistance	Good
Oil Resistance	Fair
Chemical Resistance	Excellent
Abrasion Resistance	Good
Solvent Resistance	Good
Ozone Resistance	Excellent
Other Properties	
Adhesion to Metals	Excellent
Solvent Resistance	Good
Compression Set	Fair

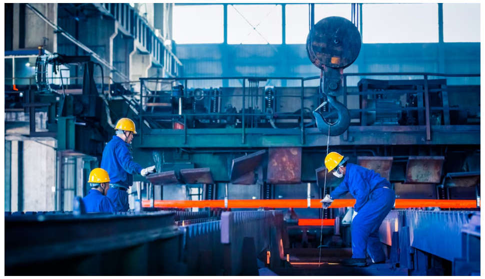
Industries Relying On Co-Extruded Plastics & Tubing

TPE Application Areas

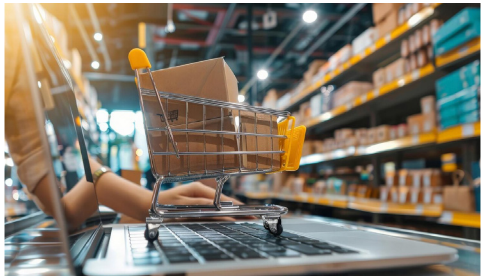
Thermoplastic Elastomers is Used in Automotive Parts



Thermoplastic Elastomers is Used in Construction Materials



Thermoplastic Elastomers is Used in Industrial Applications



Thermoplastic Elastomers is Used in Consumer Products

Thermoplastic Elastomers is Used in Medical Supplies

Thermoplastic Elastomers is Used in Electronic Devices

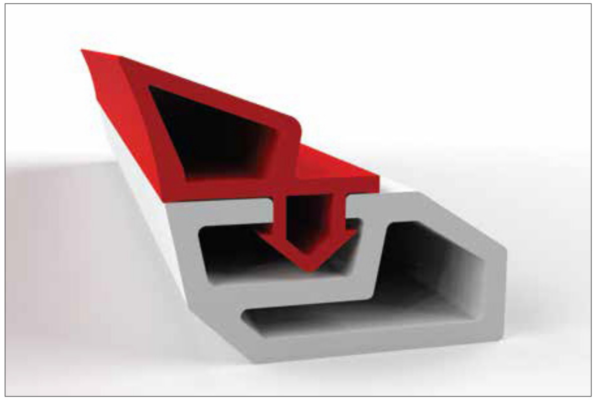
Thermoplastic Elastomers is Used in Footwear and Sporting Goods

Commercial Tapes Are Classed Under Six Generic Classes

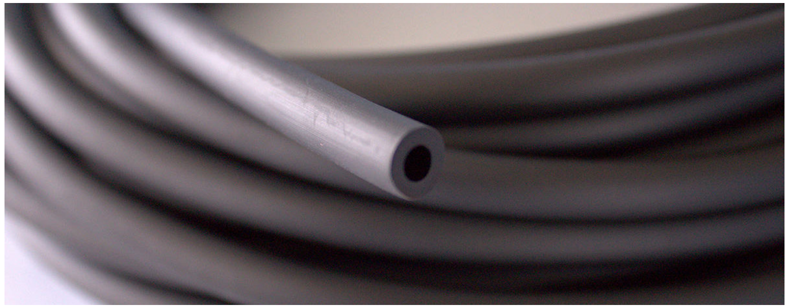
1. **STYRENIC BLOCK COPOLYMERS, TPS (TPE-S)**
2. **THERMOPLASTIC POLYURETHANES, TPU (TPU)**
3. **THERMOPLASTIC VULCANIZATES, TPV (TPE-V OR TPV)**
4. **THERMOPLASTIC POLYOLEFIN ELASTOMERS, TPO (TPE-O)**
5. **THERMOPLASTIC COPOLYESTER, TPC (TPE-E)**
6. **THERMOPLASTIC POLYAMIDES, TPA (TPE-A)**

Styrenic Block Copolymers, Tps (Tpe-S)

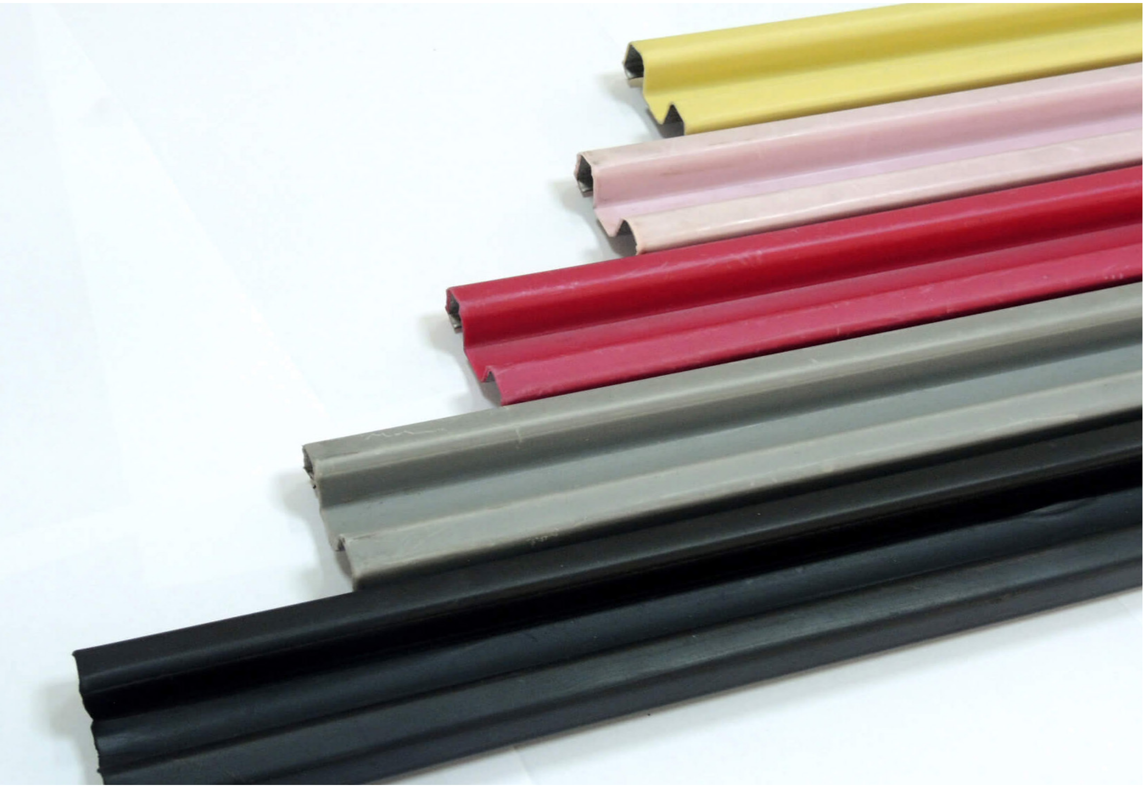
Styrenic block copolymers (TPE-S) are composed of distinct hard and soft segments. Styrene blocks provide thermoplasticity, while butadiene mid-blocks impart elastomeric properties. These versatile materials find applications in footwear, adhesives, bitumen modification, seals, and grips, particularly where high chemical and aging resistance is less critical.



Thermoplastic Vulcanizates, Tpv (Tpe-V Or Tpv)



Thermoplastic vulcanisates (TPE-V or TPV) offer improved performance over TPE-O. They are also compounds of PP and EPDM rubber, but have been dynamically vulcanised during the compounding step. They are increasingly being used for automotive seals, pipe seals, and other applications where a heat resistance of up to 120°C is required.



Key Properties

- Excellent Chemical & Oil Resistance
- Superior Weather & Shock Resistance
- High Durability & Fatigue Resistance
- Wide Temperature Range: -60°C to +125°C
- Lightweight & Durable
- Excellent Aging Characteristics

Available Grades

- UV Resistant
- Flame Retardant
- FDA Approved
- Medical Grade

Tpe Vs Tpv What's The Difference ?

TPE and TPV are both thermoplastic elastomers, but their compositions differ. TPV utilizes vulcanized rubber (EPDM within polypropylene), while TPE does not. TPV offers several advantages over TPE.

FACTORS	TPE	TPV
Abbreviation	Thermoplastic Elastomer	Thermoplastic vulcanizate
Composition	A blend of thermoplastic & elastomeric materials	Precisely, TPV blends a thermoplastic & vulcanized EPDM rubber within polypropylene.
Elasticity	Comparatively more elastic than TPV	Also flexible, but not superior to TPE.
Temperature Resistance	Limited to high-temperature applications	Suitable for high-temperature applications due to vulcanized rubber content
Chemical Resistance	Limited to applications involving aggressive chemicals	TPV offers food chemical resistance. But may still be sensitive to hot oils & aqueous solutions.
UV Resistance	UV sensitive, leading to severe degradation over time	TPV offers better UV resistance due to the presence of EPDM rubber
Abrasion Resistance	Less abrasion resistant than TPV	TPV offers good abrasion resistance due to its vulcanized rubber content
Compression and tension sets	Good, but it may not be as good as TPVs in this aspect	TPV exhibits excellent compression & fixed set resistance.
Manufacturing Cost	Typically, a cost-effective solutions	Compared to EPDM compression molds, tooling for TPV thermoplastic can be expensive.

Thermoplastic Polyurethanes, Tpu (Tpu)

Thermoplastic polyurethanes (TPU) excel in applications demanding tear strength, abrasion and flex fatigue resistance. TPU's resistance to ozone, extreme temperatures, and abrasion makes it ideal for harsh environments. It's commonly used in sporting goods, tubing, wire, protective coatings, and medical devices.TPU offers versatile processing and performance characteristics. It can be colored with masterbatches and is naturally transparent (UV stabilization is recommended to prevent yellowing). Like TPRs, TPUs are combustible but can be made self-extinguishing with additives. While painting and lacquering typically require a primer, TPU can be mirror welded. It exhibits good resistance to oils and greases but less so to acids and alkalis. TPU can bond to itself (different colors), as well as hard PVC, ABS, ASA, PMMA, and PC.

1.Colors
TPU can be coloured with masterbatches.

4.Painting and lacquering
In general, seals and gaskets are not painted or coated. In cases where a coating is required, a primer must be used.

2.Transparent
TPU is a transparent material. It is always advisable to add a UV stabiliser to prevent yellowing and deterioration of the material.

5.Welding
TPU can, like TPR, be welded by mirror welding techniques.

7.Bonding with other materials
TPU can be bonded with natural TPU, like with different colours, as well as with hard PVC, ABS, ASA, PMMA, and PC.

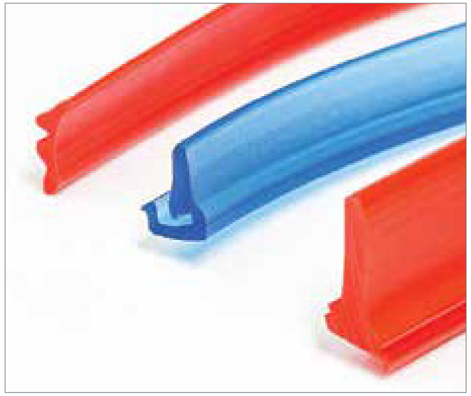
3.Combustibility
TPU's are like TPR's combustible. TPU material can be altered with additives to make the material self-extinguishing and nonflammable.

6.Chemical resistance
TPU is resistant to oil and greases, less against acids and alkalis.

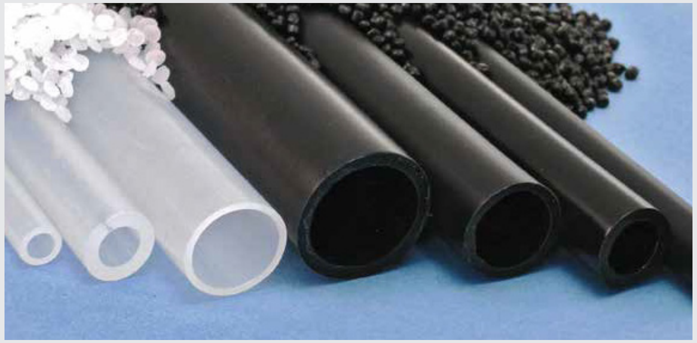
8.Tolerable temperature
-60 C (-76 F) to 110 C (230 F)

Applications

- **Motion Components:** Belt/strap guides, sliding profiles
- **Structural:** Solid rods
- **Fluid Transfer:** TPU tubes/hoses



EVA TUBING



Centroid Polymer Technologies produces FDA-compliant Ethyl Vinyl Acetate (EVA) tubing in various grades, sizes, and lengths, suitable for food contact within the EU. This makes it ideal for food and beverage transfer applications. EVA tubing offers low steam and gas permeability, ensuring excellent gas tightness (e.g., in CO2 pipelines). It combines the flexibility of soft PVC with the properties of LDPE. The tubing exhibits high chemical tolerance, withstanding substances like formic acid, ethanol, ethylene diamine, and various other chemicals and acids.

EVA chemical tubing offers several key advantages: low density, high abrasion resistance, excellent mechanical stability, and a smooth, non-adhesive inner surface. It exhibits good resistance to aging and temperature variations, along with strong dielectric properties. This tubing is also flame-resistant, impact-resistant even at low temperatures, and is both tasteless and odorless. Also,...

- EVA Chemical Tubing has a Low-density
- Quite high resistance to abrasion
- Outstanding mechanic stability
- Anti-adhesive surface (smooth-walled)
- Quite high resilience to aging and temperature
- EVA Chemical Tubing has good Dielectric Properties
- EVA Chemical Tubing is hardly flammable
- Strong impact power, even in low temperatures
- Tasteless and odorless
- Flexible, resistant substance

Tube Specifications

INNER TUBE	EVA (ETHYLENE VINYL ACETATE COPOLYMER)
GENERAL SPECIFICATION	
APPLICATIONS	For use as CO2 pipeline in dispensing equipment
CHARACTERISTICS	**Density:** 0.934 g/cm3 (DIN 53479) **Tear resistance:** 28 MPa **Elongation at break:** 530 % **Dielectric constant:** 2.6 at 106 Hz (DIN 53483) **Permeability to steam:** 4.5 g / (m2 x d) (DIN 53122) **Tolerance:** DIN ISO 3302-1 E2 **Regulations:** EG 10/2011, FDA
HARDNESS BY SHORE A	**A :** 94° ±5° (DIN 53505)
TEMPERATURE RESISTANCE 0C	**Temperature range:** -30 to +60 °C **Vicat softening temperature:** +71 °C
P [BAR]	30 bar at +20 ° C
COLOR	Translucent

Tube Specifications

- **Food-Grade**
  FDA-compliant materials for safe food & beverage contact.
- **Alcohol Resistant**
  Remains pliable after contact with alcohol
- **Visual Clarity**
  Natural translucent color allows flow monitoring.
- **Durable**
  Good weatherability, gas & moisture resistance.
- **Wide Temperature Range**
  Flexible from -29°F to 160°F.
- **High Performance**
  Low friction coefficient and good chemical resistance.
- **Safe & Inert**
  Non-toxic, odorless, tasteless, and chemically inert.

PTFE

PTFE, the first fluoropolymer, is a remarkably versatile material. Its hydrophobic, non-wetting nature, high density, and temperature resistance lead to diverse applications. While known for its non-stick properties, PTFE's uses extend far beyond this.

We custom-design PTFE compression molding tooling in-house. For higher-volume projects, we leverage cost-effective molded near-net shapes. These shapes minimize excess material and machining time. We analyze the time and material savings against tooling costs to determine the optimal production volume for custom tooling.

- Very low coefficient of friction.
- Add glass & carbon fillers to improve dimensional stability OR enhance specific properties – EG abrasion resistance.
- Low flammability.
- High UV and weather resistance.
- Suitable for food contact – (can be FDA compliant).
- Water resistant
- High impact strength.

- No moisture absorption
- Wide working temperature from -60°C to 260°C.
- Good electrical insulating properties.
- Excellent chemical resistance.

Centoid Polymer Technologies PTFE (Polytetrafluoroethylene) Molding Processes Include

Automated Molding
Pre-forming and compression molding of PTFE blanks and finished parts.

High-Efficiency Molding
Multi-cavity tooling for increased output.

Specialized PTFE
High-purity molding for critical applications.

Modified PTFE Fusing
A unique process (distinct from hot gas welding) ideal for cylindrical shapes like custom containers, vessel liners, and sleeves

Centroid Polymer Technologies' custom-designed Teflon™ PTFE compression molding presses ensure high-quality preforms. These presses are specifically engineered for PTFE resins, producing finished parts with consistent mechanical properties throughout the material lot.

Expand Your Options With Fillers

PTFE's performance can be tailored by blending it with other materials, creating specialized compounds with enhanced physical properties. We offer a wide range of filled PTFE compounds, incorporating materials like bronze, carbon fiber/powder, colorants, glass fiber/bead, graphite, molybdenum disulfide, polyimide, and Ryton, to improve wear, friction, compressive strength, conductivity, and creep resistance.

- Bronze
- Colorant (For visual identification)
- Graphite
- Polyimide
- Carbon (Fiber or Powder)
- Glass (Fiber or Bead)
- Molybdenum Disulfide
- Ryton

PTFE Parts & Components

PTFE Part Manufacturing

We specialize in manufacturing a wide range of PTFE components using state-of-the-art equipment and our team's extensive PTFE expertise.

- High Performance Seals
- Backup Rings
- Slide Bearings
- Valve Seats
- Tubes & Rods
- Component Design & Manufacturing
- PTFE Skived Strips & Tapes

Bonding PTFE

PTFE can be bonded to rubber, metal, and plastic using a variety of methods, including chemical etching, machining, and resin adhesives. The resulting bond can be durable and long-lasting.

PTFE to rubber bonding

- **Benefits :** Can create a low-friction seal that's compliant and reduces damage
- **Applications :** Can be used in rotary or linear shaft seals, composite wear pads, and more
- **Method :** Can be bonded using a tried-and-true method that creates a durable bond

PTFE to metal bonding

- **Benefits :** Can be used to bond PTFE to metal, cabling, or tubing
- **Method :** Can be bonded using resin adhesives, machining methods, and chemical etching

PTFE to plastic bonding

- **Method :** Can be bonded using resin adhesives, machining methods, and chemical etching

Surface preparation

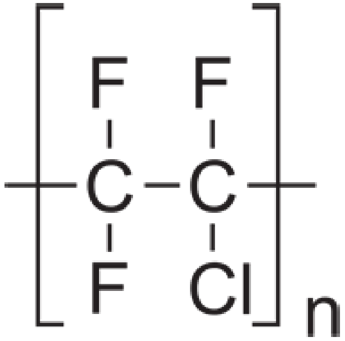
- Surface roughness should be between Ra = 1.6 m and Ra = 3 m
- Clean with trichloroethylene, perchloroethylene, or acetone
- Chemical etching can be used to make the PTFE surface chemically reactive

PTFE Etching Service

Centroid Polymer Technologies can chemically etch the surface of PTFE. PTFE is an amazing non-stick material, but what about when you need to glue it to the surface of another material ? In order to bond standard PTFE to another surface such as Rubber process called "etching" is required. Etching is a chemical process that removes the fluorine atoms from the surface layer of the fluoropolymer.

Note: Etched surfaces will discolor to a brown appearance.
May be Etched on One Side (EOS) (Standard) or Two Sides (E2S) Etched PTFE

PCTFE (POLYCHLOROTRIFLUOROETHYLENE)



PCTFE (POLYCHLOROTRIFLUOROETHYLENE)
A Homopolymer of Chlorotrifluoroethylene
PCTFE excels in extreme conditions.
It maintains its physical properties at extremely low temperatures and exhibits exceptional dimensional stability due to its negligible moisture absorption. This unique fluoropolymer also retains its electrical properties in high-humidity environments.

Properties

PCTFE, available in thin, transparent sheets, exhibits exceptional optical clarity due to its low crystallinity. This glass-like appearance makes it ideal for use as sight glasses in various applications.

About

PCTFE excels in demanding environments due to its exceptional chemical resistance, outstanding temperature range (-240°C to 193°C), and inherent flame resistance. Its remarkable dimensional stability, stemming from the lowest coefficient of thermal expansion among unfilled fluoropolymers, makes it ideal for critical applications. Aerospace and cryogenic applications heavily utilize PCTFE, leveraging its unique combination of properties to withstand extreme conditions.

Strengths

Mechanical Stability
Stress Cracking, Cold Flow Resistance.

Chemical & Environmental Resistance
Corrosion, Weathering, Chemical attack.

Temperature Performance
Corrosion, Weathering, Chemical attack.

PCTFE Parts

PCTFE's low melt viscosity enables processing methods like extrusion, compression molding, and injection molding. Applications include valve seats, seals, sight glasses, windows, and critical components in cryogenic environments.

- **PCTFE: Ideal for Valve Seats & Seals**
  PCTFE's excellent low-temperature stability makes it an ideal material for ball and butterfly valve seats and seals.
- **PCTFE Component Design & Manufacturing**
  We specialize in designing and manufacturing custom PCTFE components. Whether you need a new part from scratch or a solution for a failing component, our engineers can create high-performance PCTFE products tailored to your specific needs.

Performance Characteristics

- **Dimensional Stability**
  High rigidity and resistance to cold flow.
- **Low Permeability**
  Minimal gas permeation and outgassing.
- **Chemical Resistance**
  Excellent resistance to various chemicals.
- **Temperature Range**
  Operates from -400°F to 380°F.
- **Environmental Resistance**
  Near zero moisture absorption and radiation resistance.

PCTFE Excels In Demanding Applications

- **Cryogenic & Chemical Processing**
  Handles extreme temperatures and corrosive environments.
- **Aerospace & Industrial**
  Ideal for valves, pumps, and seals in critical systems.
- **Nuclear & Radiation**
  Withstands high radiation exposure.
- **Laboratory & Analytical**
  Suitable for precision instruments

CENTROID
Polymer Technologies

Contact
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